Chapter 7

Population

Contents

7. Population

7.1. Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) identifies, describes, and presents an assessment of the likely significant effects of the proposed project on the population. The assessment will examine the potential impacts during the construction and operational phases. Having regard to the EPA (2022) '*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*', this chapter will examine:

- Land Use Change and Settlement Patterns;
- Journey Characteristics and Journey Amenity;
- Community Infrastructure (including Local Services and Amenity); and
- Economic Activity (including Tourism and Employment).

Population assessment is a broad ranging topic and interacts with all other environmental factors to some degree or another.

A separate chapter and assessment of the potential effects of the proposed project on Agricultural and Non-Agricultural properties in terms of disturbance, nuisance, severance, and land-take is provided in Chapter 16 and 17, respectively. Similarly, a separate chapter and assessment of the potential effects of the proposed project on Human Health is covered in Chapter 23.

This chapter has been prepared with and should be read in conjunction with the following chapters of the EIAR:

- Chapter 4 Project Description
- Chapter 5 Construction Strategy
- Chapter 6 Traffic and Transportation
- Chapter 12 Air Quality
- Chapter 13 Climate
- Chapter 14 Noise and Vibration
- Chapter 16 Material Assets: Agricultural Properties
- Chapter 17 Material Assets: Non-Agricultural Properties
- Chapter 18 Material Assets: Utilities
- Chapter 23 Human Health
- Chapter 24 Risk of Major Accidents and Disasters
- Chapter 26 Cumulative Effects

7.2. Legislation, Policy and Guidance

7.2.1. Legislation

The Transport (Railway Infrastructure) Act 2001 (as amended) provides for the making of a Railway Order application by Córas Iompair Éireann to An Bord Pleanála. The European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the EIA Directive (EU Directive 2011/92/EU as amended by Directive 2014/52/EU) on the assessment of the effects of certain public private projects on the environment by amending the Transport (Railway Infrastructure) Act 2001 ('the 2001 Act'). An examination, analysis and evaluation is carried out by An Bord Pleanála in order to identify, describe and assess, in light of each individual case, the direct and indirect significant effects of the proposed railway works, including significant effects derived from the vulnerability of the activity to risks of major accidents and disasters relevant to: population, human health, biodiversity; with particular attention to species and habitats protected under the Habitats and Birds Directives; land, soil, water, air and climate, material assets, cultural heritage, the landscape, and the interaction between the above factors. In carrying out an EIA in respect of an application made under section 37 of the 2001 Act, An Bord Pleanála is required, where appropriate, to co-ordinate the assessment with any assessment under the Habitats Directive or the Birds Directive.

The key legislation and guidance referenced in the preparation of the EIAR is also outlined in Chapter 1 (Sections 1.5, 1.6 and 1.7).

7.2.2. Policy

Relevant policy documents that have informed the assessment include:

- Project Ireland 2040 (National Planning Framework and National Development Plan 2021 – 2030);
- Transport Strategy for the Greater Dublin Area 2016 - 2035;
- Draft Greater Dublin Area Transport Strategy 2022-2042;
- GDA Cycle Network Plan 2013;
- Draft GDA Cycle Network Plan 2021;
- Eastern and Midlands Regional Assembly Regional Spatial and Economic Strategy 2019-2031;
- Dublin City Development Plan 2022-2028
- South Dublin County Development Plan 2022-2028;
- Kildare County Development Plan 2017-2023 (and draft plan 2023 – 2029 as available);
- Celbridge Local Area Plan 2017 – 2023;
- Adamstown SDZ 2014 and 2020 Amendment to Adamstown SDZ 2014;
- Clonburris SDZ 2019; and
- Park West - Cherry Orchard Local Area Plan 2019.

An overview of the relevant planning policy is outlined in Chapter 2 insofar as it informs land use and settlement patterns.

7.2.3. Guidance

In addition to the broader EPA guidance and that referred to in Chapter 1 (Section 1.7) of this EIAR, regard has also inter alia been had to:

- Highways England (HE, 2020), DMRB Volume 11 Section 3 LA 112 Revision 1 Sustainability and Environment, Appraisal, Population and Human Health.
- Fáilte Ireland (2011), Guidelines on the treatment of Tourism in an Environmental Impact Statement.

7.3. Methodology

The assessment will cover effects at the local level, on people and communities in the immediate vicinity of the proposed project, and wider effects upon the surrounding areas (in respect of its more rural context).

The assessment of impacts on population is undertaken at a community level rather than for individuals or identifiable properties. Analysis of potential impacts resulting from the project are described in relation to a number of assessment themes, which were determined at EIA Scoping stage. These are:

- Land Use Change and Settlement Patterns;
- Journey Characteristics and Journey Amenity;
- Community Infrastructure (including Local Services and Amenity); and
- Economic Activity (including Tourism and Employment).

The focus of the chapter is to establish the potential socio-economic impacts on population and employment in the area and on potential impacts to the community, including the resident and working population and those visiting the community.

To establish the existing receiving environment / baseline, a thorough desk-based study and windshield survey of the railway corridor, development and construction sites was undertaken.

7.3.1. Study Area

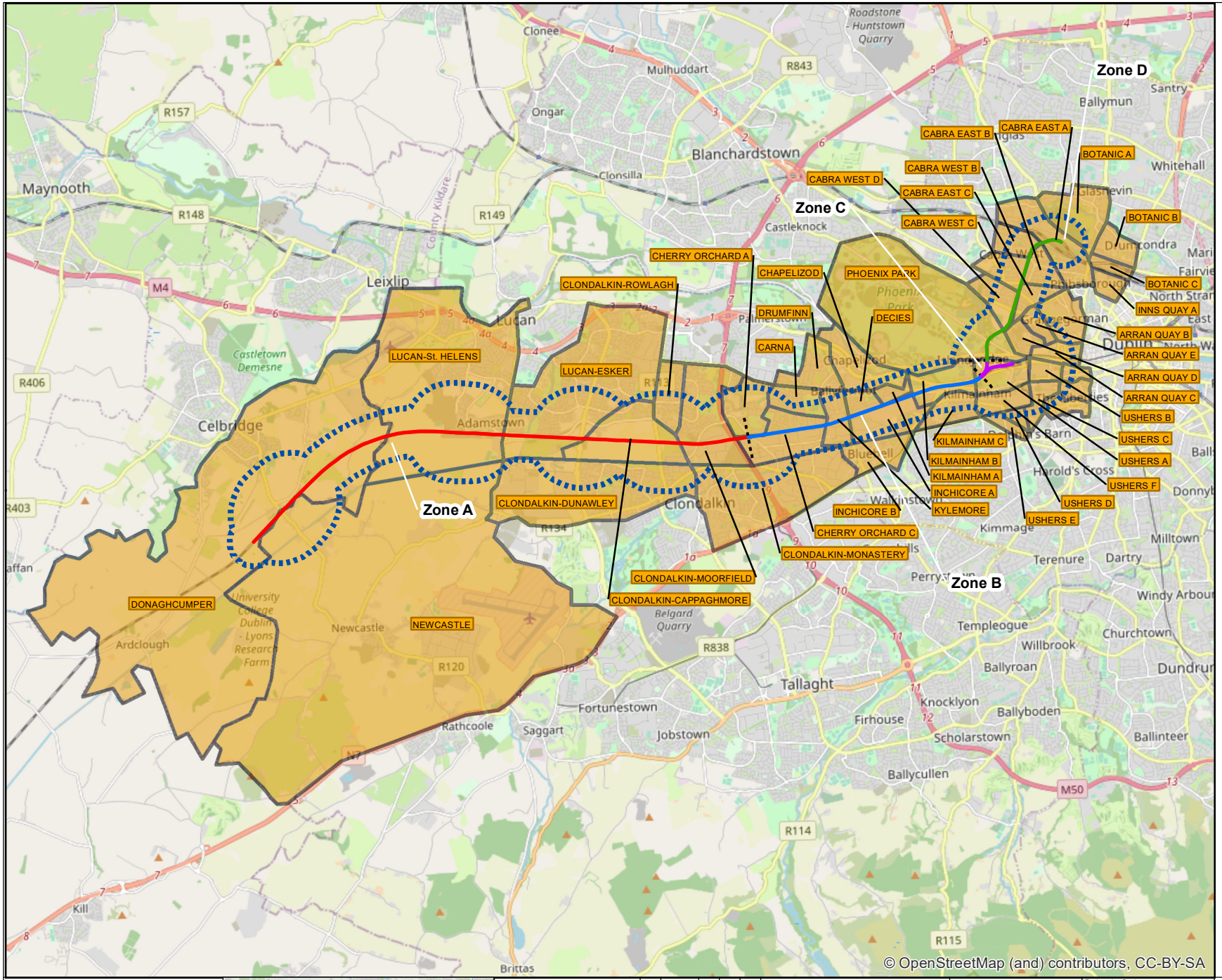
The study area for the assessment of Population will generally cover the area within which significant effects on population, employment and the local economy could occur. Defining the spatial scope can be complex in particular given the range of receptors and the linear nature of the project, since these receptors would experience aspects of the proposed Project in different ways and in different locations. The spatial scope of the study area must therefore be sufficiently large to enable the identification of likely significant effects to be defined.

The study area for the purposes of this assessment is the construction footprint / Project boundary (including compounds and temporary land-take), and a wider area identified as 500m from the track and 1km from existing and proposed railway stations. The study area is consistent with the approach for other linear projects. It is not, however, meant to be overly stringent and impacts beyond this

distance are also considered, especially having regard to the wider population benefiting from the improved public transport.

Demographic trends (e.g. population and employment figures etc.) are analysed at state, county and local levels for the purposes of the EIAR. For the purposes of examining census population data, those Electoral Divisions (EDs) wholly or partially included within the study area were also examined.

The study area for the purposes of this chapter is illustrated in Figure 7-1.



Legend

- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- Electoral Districts within Study Area
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

N W E S

DART+ South West

NTA | Project Ireland 2040

Rev	Date	Drn	Ch'k'd	App'd	Description
v03	19/10/2022	JS	CH	VB	Population Study Area
v02	08/09/2022	JS	CH	VB	Population Study Area
v01	04/07/2022	MV	CH	VB	Description

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS, TNO RAIL

Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:110,000 @ A4	JS	CH	VB

Project Code	Issuer	QMS Code
5195886	TTA	

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.1: Population Study Area**

Drawing File Name	Version	Status
DP-04-23-DWG-EV-TTA-23768	v03	S3

7.3.2. Survey Methodology

7.3.2.1. Desk Surveys

To establish the existing receiving environment / baseline, a thorough desk-based study of the site was undertaken. Desk-based information collected to inform the baseline included: Ordnance Survey Ireland (OSI) maps; aerial photography; GIS datasets; Google maps; and statistical information from the Central Statistics Office (CSO). Further information was also obtained through engagement with consultees.

The following publications and data sources have informed the population baseline assessment:

- CSO data (www.cso.ie);
- ESRI Quarterly Economic Commentary;
- Pobal Mapping (https://maps.pobal.ie/);
- Department of Education Find a school map-based application[1];
- OpenStreet Map[2];
- Google Maps;
- Ordnance Survey Ireland (OSI) Mapping;
- Policy and guidance documents as outlined in Section 7.2.2 and Section 7.2.3;
- Other relevant environmental data considered during the various environmental assessments contained in this EIAR particularly traffic, noise, air and climate, water, land and soil, material assets, landscape and visual impacts, etc.;
- Review of aerial photography including Google Earth (accessed April 2022) to inform observations of settlement/ development patterns, transportation routes, and to inform the land use survey;
- Consideration of the issues and / or concerns raised during public consultations as part of the design and EIA process; and
- Site visit to confirm land uses along the route.

7.3.2.2. Field Surveys

Windshield surveys of the study area were undertaken as part of this assessment to confirm the findings of the desktop study in relation to the land uses and sensitive receptors within the study area and further inform the baseline environment. Walkover surveys were also undertaken at specific locations along the route to gain a greater appreciation of the local environment. These surveys took place on 28th April 2022.

Data from the surveys undertaken as part of the inter-related technical disciplines has also been used to inform the population assessment.

[1] Available at www.gov.ie/en/service/find-a-school/
[2] Available at www.openstreetmap.org

These surveys have informed the population assessment by identifying potentially sensitive receptors for these disciplines, such as schools, hospitals, residential properties, tourism, and recreational amenities. Further details are provided in Section 7.4.4.

7.3.3. Models / Tools Used in Assessment

No specific software or models were used for the population assessment.

7.3.4. Assessment Methodology

7.3.4.1. Key Parameters for Assessment

The likely significant effects that the construction and operational phases of the proposed Project may have on the population are outlined below:

Construction Phase

- Direct impacts on the population structure / settlement patterns and economic activity due to the employment of workers from outside the county that may choose to reside in the immediate local area during the construction period;
- Employment opportunities during the construction period;
- Permanent or temporary land-take of community land (e.g. community facilities, parks etc.);
- Changes to land use characteristics affecting existing land uses; and
- Temporary impact on tourist locations such as the Phoenix Park.

Operation and Maintenance Phase

- Increased passenger capacity and enhanced train service and potential impacts on sustainable economic development and population growth, accessibility to jobs, education, and other social and economic opportunities;
- Impacts on land use planning by catering for planned growth of existing and future transport-oriented development areas such as Adamstown, Clonburris, Cherry Orchard and Park West;
- Modal shift from unsustainable private car usage to public transport, promoting sustainable travel patterns and integration with other public transport modes.

Determining the significance of effects involves defining the impact (magnitude and nature) and the value (sensitivity) of the receptor.

7.3.4.2. Criteria Used to Assess and Describe Population Effects

The purpose of the population assessment is to identify the likely significant effects that the construction and operation phases of the proposed Project may have on the population. It usually follows that impacts of a population are a function of:

- The location and character of the local environment;
- The sensitivity of the local population and its capacity to absorb change;
- The nature of the environmental effect;
- The scale or extent of the effect in terms of area or population affected;
- The duration and frequency of an effect; and,
- The probability of an impact's occurrence and possibility of effectively reducing the effects (mitigation).

Impacts result from direct, indirect, secondary, and cumulative effects on existing environmental conditions. Effects can be *positive / beneficial, neutral,* or *negative / adverse*. The significance of an effect depends on, among other considerations, the nature of the environmental effect, the timing and duration of an effect and the probability of the occurrence of an effect. The significance of an effect is described as *imperceptible, not significant, slight, moderate, significant*, *very significant* or *profound*. The impacts may be short-term, medium-term, or long-term. The duration or frequency of an effect may be *momentary, brief, temporary, short-term, medium-term, long-term, permanent, or reversible* in accordance with the timescales detailed in Table 7.1. The frequency of that effect can also influence significance i.e., if the effect will occur once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually. For example, disruption to road traffic for a few hours could be described as having an *imperceptible, negative, brief* impact versus the complete closure of a road for a number of months which could be described as a *very significant, negative*, *temporary* impact.

The population assessment addresses impacts at a community level rather than for individuals or identifiable properties, although population effects for individual properties are discussed where these are significant and / or located within close proximity to the proposed Project.

The criteria used to describe the potential population effects are outlined in Table 7.1 which has been adapted in accordance with the EPA Guidelines (2022).

Table 7.1: Definition of Terms – Quality of Effect

Quality of Effect	Definition
Positive / Beneficial Effects	A change which improves the quality of the environment
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative / Adverse Effects	A change which reduces the quality of the environment

Significance of Effect	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment
Very Significant Effects	An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.
Describing the Extent and Context of the Effect	**Definition**
Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Describing the Probability of the Effects	**Definition**
Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects	**Definition**
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects last less than a day
Temporary Effects	Effects lasting less than a year
Short-term Effects	Effects lasting one to seven years
Medium-term Effects	Effects lasting seven to fifteen years
Long-term Effects	Effects lasting fifteen to sixty years.
Permanent Effects	Effects lasting over sixty years
Reversible effects	Effects that can be undone, for example through remediation or restoration.

Frequency of Effects	Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hour, daily, weekly, monthly, annually).

The methodology for the evaluation of the impacts of the proposed Project is based on previous experience and professional judgement. Given the nature of the proposed Project, quantitative and qualitative impacts have been considered where possible including employment, possible disruption during the construction phase and other impacts.

Land Use Change and Settlement Patterns

Land use changes can affect the population in different ways. Planning policy plays an important role in guiding and facilitating changes in land use which can influence settlement as well as transportation patterns. Planning policy ensures that these changes are managed sensitively and are appropriate to the unique, existing, and emerging social, economic, and environmental conditions. The primary consideration relating to land use change is to assess whether the proposed Project conforms with land use policy and to identify if the proposed Project is likely to change the intensity of patterns, types of activities and land uses. A review of planning policy was carried out as part of this assessment (see also Chapter 2 Policy Context and Need for the Project as well as an assessment of the existing and emerging baseline and its capacity to absorb potential changes.

Journey Characteristics and Journey Amenity

Journey length refers to the distance associated with a particular journey, whilst duration is the time taken to make the journey. Average walking speed for pedestrians is taken to be 5km/h. Average cycling speed is assumed to be 20km/h3. Positive impacts result from a decrease in journey length or duration and negative impacts result from an increase in journey length or duration. In addition, new transport facilities can improve accessibility or connectivity through the combined effect of reduced journey time.

The assessment of journey amenity is supported by cross-reference, where necessary, with the relevant specialist chapters. The level of traffic on a road, the proximity and separation of footpaths and cycle-paths, the nature of any junctions to be negotiated, the legibility of a journey (including signage), visual intrusion (including sightlines) and safety for equestrians, are amongst the factors relevant to the assessment of journey amenity, as are the number and types of people affected. The principal concern is with pedestrians and cyclists, but journey amenity impacts also apply to drivers.

Community Infrastructure (including Local Services and Amenity)

Community infrastructure is important for providing general amenities to a population. This type of infrastructure can be far reaching and can include community infrastructure that is physical, social, and economic in nature that adds to the community or general amenity value of a population. Community infrastructure can also be valuable for large sections of certain populations, these can include places of worship, or places where people can relax and enjoy public spaces such as parks, sports grounds, community centres, libraries, etc.

Economic Activity (including Tourism and Employment)

Economic and employment impacts can occur at the regional and local scale and can be either positive or negative. Changes in access or connectivity as a result of a development, can have significant effects on existing businesses or investment opportunities. Strategic transport infrastructure is normally proposed with the intention of improving national / regional and / or local competitiveness and economic/social linkages. For instance, in relation to improving access to / from areas, reducing journey time, and improving journey time reliability for the commuting workforce, commercial goods, or for tourists. There can also be negative effects in relation to indirect effects such as loss of passing trade to businesses, effects to car parks and those who cannot use public transport and / or rely on vehicular access to facilities which may be affected by the proposed transport infrastructure.

In general, the economic impacts are assessed at a community level, however, the proposed Project may affect identifiable local businesses which are detailed in the Chapter 16 Material Assets - Agricultural Properties and Chapter 17 Material Assets - Non-Agricultural Properties. Other economic impacts could affect the wider community, for example where a number of businesses are affected, tourism, or where the retail or business environment of a city / town is impacted.

7.3.5. Consultation

The overall project stakeholder and public consultation undertaken in respect of the Project is set out in the Public Consultation No. 1 Findings Report (for PC1) and Public Consultation No. 2 Findings Report (for PC2) which are included in Volume 4, Appendix 1.3 and 1.4. All feedback was collated, including feedback specific to the EIAR topic 'Population'. This feedback has informed this chapter including the baseline and impact assessment presented.

Specific consultation was also undertaken with key stakeholders in relation to EIA Scoping. A summary of the issues raised in relation to the scope of the EIA is included in Volume 4, Appendix 1.2. Feedback on the scope and level of detail of the assessment, data sources and methodologies as they pertain to the EIAR topic 'Population' have been reviewed and have influenced this chapter of the EIAR.

Specific consultation was also undertaken with representatives of various Departments in Kildare, South Dublin, and Dublin City Councils. This included a combination of presentations, workshops and meetings to discuss the project, technical design issues and environment and planning matters.

Nine pre-application meetings were held with ABP to explain the project and present technical and environmental information. A summary of the information presented, and the environmental issues discussed at the nine meetings is provided in Volume 4, Appendix 1.6. Feedback relevant to the topic 'Population' has been reviewed and has influenced this chapter of the EIAR.

7.3.6. Difficulties Encountered / Limitations

This chapter of the EIAR has been prepared based upon the best available information and in accordance with current best practice and relevant guidelines. There were no particular difficulties encountered in preparing the population assessment.

As outlined previously in Chapter 1 Introduction (Refer to Section 1.9), due to the unprecedented Covid-19 pandemic, Government restrictions during both 2020 and 2021 presented unique challenges for the project team to progress the EIAR. Due to the public health restrictions, in-person consultation was not permitted for the public consultation events for the project. Restrictions on movement in order to combat the spread of Covid-19 were imposed by the government. Due to certain government restrictions, travel, community events, gathering and 'normal' in person communities' activities associated with the EIA process were affected. These community changes and impacts are considered as part of this population assessment, as far as is possible in an evolving global pandemic and what it might mean for the future of settlements, travel, and communities.

The most recent Census of Population was undertaken in April 2022. At this time, a limited quantity of relevant data from the 2022 Census has been published, pertaining chiefly to overall population in counties and Electoral Districts (Eds). The 2022 data has been utilised where available. Data from the 2016 census continues to be used where the 2022 Census is unavailable.

7.4. Receiving Environment

The proposed Project has been divided into four distinct geographic zones along the length of the corridor (Zones A to D) as outlined in Chapter 4 Project Description and summarised below. The proposed Project is described from west to east along the railway corridor.

- **Zone A** - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station (refer to Section 4.6);
- **Zone B** - Park West & Cherry Orchard Station to Heuston Station (incorporating Inchicore Works) (refer to Section 4.7);
- **Zone C** – Heuston Yard & Station (incorporating New Heuston West Station) (refer to Section 4.8);
- **Zone D** - Liffey Bridge to Glasnevin Junction (Phoenix Park Tunnel Branch Line) (refer to Section 4.9).

A description of the relevant aspects of the current state of the environment (baseline scenario) in relation to population is provided below. Specific chapters in this EIAR provide a baseline scenario relevant to the environmental topic being discussed. Therefore, the baseline scenario for separate environmental topics is not duplicated in this section; however, in line with guidance provided by the EPA, the assessment of impacts on population includes reference to those environmental topics under which effects on population might occur (e.g. noise, water, air quality etc), but is not duplicated throughout this section.

In order to ensure a robust assessment, the baseline provides a general overview, and then separately addresses the following key themes of:

- Land Use Change and Settlement Patterns;
- Journey Characteristics and Journey Amenity;
- Community Infrastructure (including Local Services and Amenity); and
- Economic Activity (including Tourism and Employment).

7.4.1. Current Baseline

The most recent Census of Population was undertaken in April 2022. Demographic trends are analysed at state, county, and local levels for the purposes of the EIAR. For the purposes of examining census population data, those Electoral Divisions (EDs) wholly or partially included within the study area were also examined. In this regard, the project falls within 42 EDs as identified in Figure 7-1.

Table 7.2 shows the population within the State, County Area and the State.

Table 7.2: Population Growth 2011-2016

Area	2011 Population	2016 Population	2022 Population	% Change 2011-2022
State	4,588,252	4,761,865	5,123,536	11.7
County Kildare	210,312	222,504	246,977	12.9
South Dublin	265,205	278,767	299,793	13.0
Dublin City	527,612	554,554	588,233	11.5
County Kildare Electoral Divisions:				
Donaghcumper	5,710	6,257	6,641	16.0
South Dublin Electoral Divisions:				
Newcastle	3,749	4,257	5,566	48.5
Lucan – St. Helens	9,450	10,658	16,656	76.5
Lucan - Esker	29,820	32,236	33,550	12.5
Clondalkin – Cappaghmore	2,605	2,581	2,411	-0.7
Clondalkin – Dunawley	10,877	11,323	11,285	3.7
Clondalkin – Rowlagh	4,058	4,096	4,092	0.8
Clondalkin – Moorfield	6,251	6,376	7,074	13.1
Clondalkin – Monastery	10,904	11,316	11,294	3.6
Dublin City Electoral Divisions:				
Cherry Orchard A	3,414	3,254	3,447	-1.0
Cherry Orchard C	4,551	4,545	4,745	4.3
Carna	2,801	2,836	2,867	2.4
Drumfinn	3,508	3,588	3,643	3.8
Chapelizod	3,047	3,056	3,373	10.7
Decies	2,716	2,677	2,723	0.3
Inchicore A	2,196	2,392	2,460	12.0
Inchicore B	1,992	2,218	2,274	14.1
Kylemore	2,566	2,657	2,556	0.0

Area	2011 Population	2016 Population	2022 Population	% Change 2011-2022
Kilmainham A	2,511	2,534	2,673	6.5
Kilmainham B	2,233	2,414	2,600	16.4
Kilmainham C	4,358	5,186	4,941	13.4
Phoenix Park	1,538	1,534	1,429	-7.1
Ushers A	3,089	3,930	5,090	64.8
Ushers B	1,292	1,312	1,858	43.8
Ushers C	3,730	3,983	4,143	11.0
Ushers D	2,075	2,188	2,403	15.8
Ushers E	1,830	1,790	1,866	2.0
Ushers F	3,381	3,484	3,438	1.7
Arran Quay B	3,861	4,166	5,230	35.5
Arran Quay C	4,170	4,471	4,544	9.0
Arran Quay D	3,218	3,109	3,623	12.6
Arran Quay E	3,037	3,293	3,378	11.2
Cabra West B	2,513	3,737	2,673	6.4
Cabra West C	2,699	2,953	2,873	6.4
Cabra West D	2,725	2,845	2,795	2.6
Cabra East A	5,163	5,650	5,676	9.9
Cabra East B	3,512	3,737	3,729	6.2
Cabra East C	3,631	4,085	4,110	13.2
Botanic A	3,084	3,175	3,176	3.0
Botanic B	3,264	3,481	3,572	9.4
Botanic C	1,967	2,222	2,309	17.4
Inns Quay A	3,951	3,919	4,023	1.8
Total:	179,096	188,493	196,602	9.8

Source: CSO.ie

As illustrated in Table 7.2, there was a consistently high level of population growth throughout County Kildare, South Dublin and Dublin City between 2011 and 2022 with the percent change being 12.9%, 13.0% and 11.5% respectively. Within the Study Area the overall population increased by 9.8% during this period.

Lucan – St. Helens (76.6%) and Ushers A (64.8%) have experienced a significant increase in population during the 2011-2022 period. This increase has been partially facilitated by the construction of large new residential developments in these EDs.

While the Study Area has generally experienced significant growth, it is noted that some EDs including Clondalkin-Cappaghmore (-0.7%), Cherry Orchard A (-1.0%), and Phoenix Park (-7.1%), have experienced a slight decrease in population.

7.4.1.1. Population Density

As illustrated in Table 7.3, the population density for Dublin City and South Dublin (5,046 persons per sq.m and 1,344 persons per sq.m respectively) largely exceeds the state average in comparison to County Kildare where the population density equates to 149 persons per sq.m. A large part of County Kildare is comprised of open countryside, primarily used for agricultural purposes, with clusters of residential development based around existing urban areas including, inter alia, Celbridge, Naas, Newbridge and Straffan.

Typically, areas within the study area with a lower population density possess a substantial amount of open space, including the EDs of Donaghcumper, Newcastle and Phoenix Park. Industrial areas and greenfield locations also typically have lower densities.

Forming part of the State's capital city, South Dublin and Dublin City have much higher densities than the State average (75 persons per sq.m). Within the Study Area, the population density increases towards the centre of Dublin. Increases occur within Kilmainham A (10,692 per sq.km), Inns Quay A (12,572 per sq.km), Arran Quay A (12,622 per sq.km) and Ushers D (16,020 per sq.km), as might be expected for EDs within this city centre location.

Table 7.3: Population Density 2016

Area	Area Size (sq.km)	Population 2016	Population 2022	Population Density (per sq.km)
State	68,466.06	4,761,865	5,123,536	75
County Kildare	1,693.25	222,504	246,877	149
South Dublin	223	278,767	299,793	1,344
Dublin City	116.58	554,554	588,233	5,046
County Kildare Electoral Divisions:				
Donaghcumper	24.04	6,257	6,641	276
South Dublin Electoral Divisions:				
Newcastle	32.13	4,257	5,566	173
Lucan – St. Helens	9.84	10,658	16,656	1,693
Lucan - Esker	6.40	32,236	33,550	5,242
Clondalkin – Cappaghmore	2.12	2,581	2,411	1,137
Clondalkin – Dunawley	4.8	11,323	11,285	2,351
Clondalkin – Rowlagh	0.73	4,096	4,092	5,605
Clondalkin – Moorfield	2.24	6,376	7,074	3,158
Clondalkin – Monastery	3.95	11,316	11,294	2,859

Area	Area Size (sq.km)	Population 2016	Population 2022	Population Density (per sq.km)
Dublin City Electoral Divisions:				
Cherry Orchard A	0.98	3,254	3,447	3,517
Cherry Orchard C	1.41	4,454	4,745	3,365
Carna	0.57	2,836	2,867	5,030
Drumfinn	0.82	3,588	3,643	4,443
Chapelizod	1.08	3,056	3,373	3,123
Decies	0.32	2,677	2,723	8,509
Inchicore A	1.00	2,392	2,460	2,460
Inchicore B	0.81	2,218	2,274	2,807
Kylemore	0.58	2,657	2,556	4,407
Kilmainham A	0.25	2,534	2,673	10,692
Kilmainham B	0.78	2,414	2,600	3,333
Kilmainham C	0.59	5,186	4,941	8,375
Phoenix Park	7.25	1,534	1,429	197
Ushers A	0.70	3,930	5,090	7,271
Ushers B	0.25	1,312	1,858	7,432
Ushers C	0.40	3,983	4,143	10,351
Ushers D	0.15	2,188	2,403	16,020
Ushers E	0.22	1,790	1,866	8,482
Ushers F	0.45	3,484	3,438	7,7640
Arran Quay B	0.76	4,166	5,230	6,882
Arran Quay C	0.36	4,471	4,544	12,622
Arran Quay D	0.35	3109	3,623	10,351
Arran Quay E	0.35	3,293	3,378	9,651
Cabra West B	0.45	3,737	2,673	5,940
Cabra West C	0.57	2,953	2,873	5,040
Cabra West D	0.60	2,845	2,795	4,658
Cabra East A	1.41	5,650	5,676	4,026
Cabra East B	0.47	3,737	3,729	7,934
Cabra East C	0.46	4,085	4,110	8,935
Botanic A	1.32	3,175	3,176	2,406
Botanic B	0.49	3,481	3,572	7,290
Botanic C	0.30	2,222	2,309	7,697

Area	Area Size (sq.km)	Population 2016	Population 2022	Population Density (per sq.km)
Inns Quay A	0.32	3,919	4,023	12,572
Total:	112.75	188,493	196,602	1,744

Source: CSO.ie

7.4.1.2. Age Profile

In comparison to other countries within the EU, Ireland has a relatively young population with only 13.4% of the population being aged 65+ as recorded in the 2016 Census. The age profile of the state, County Kildare, South Dublin, Dublin City and the Study Area is highlighted in Table 7.4.

County Kildare, South Dublin, Dublin City and the Study Area have a lower-than-average 65+ population and a higher 25-44 year old population in comparison to the State, with Ushers F having the largest proportion of 65+ population (21%). Within Dublin City and South Dublin, there is clear trend showing the average population age decreasing from 45 years old upwards.

South Dublin and Dublin City have the largest proportion of 25-44 year olds (31.7% and 37.4%). In 2016, the Census results show that the most mobile segment of population was those between the ages of 20-34, accounting for 45.7% of the population who moved within Ireland in 2016.

The State average for the 0-14 cohort is 21.1%. County Kildare exceeds this average by 3% while South Dublin and Dublin City have an average of 23.0% and 15.0% of 0-14 year olds. Lucan - Esker (31.0%) and Clondalkin-Cappaghmore (28.0%) have the largest average of 0-14 year olds per population.

Table 7.4: Population Structure by Age

Area	Age 0-14 (%)	15-24 (%)	25-44 (%)	45-64(%)	65+ (%)
State	21.1	12.1	29.5	23.8	13.4
County Kildare	24.1	12.6	30.3	23.2	9.9
South Dublin	23.0	12.2	31.4	22.3	11.1
Dublin City	15.0	13.2	37.4	21.3	13.0
County Kildare Electoral Divisions:					
Donaghcumper	26.1	9.5	35.3	21.0	8.1
South Dublin Electoral Divisions:					
Newcastle	24.6	9.0	33.9	18.8	13.7
Lucan – St. Helens	23.6	10.4	35.0	20.8	10.2
Lucan - Esker	31.0	11.9	35.6	19.0	2.5
Clondalkin – Cappaghmore	28.0	16.5	29.3	18.4	7.8
Clondalkin – Dunawley	22.4	16.9	33.0	21.0	6.7
Clondalkin – Rowlagh	20.7	14.7	31.3	22.2	11.2
Clondalkin – Moorfield	23.0	14.7	31.0	22.3	9.0
Clondalkin – Monastery	20.7	11.5	34.5	24.0	9.3

Area	Age 0-14 (%)	15-24 (%)	25-44 (%)	45-64(%)	65+ (%)
Dublin City Electoral Divisions:					
Cherry Orchard A	20.0	17.2	42.5	14.0	6.3
Cherry Orchard C	22.1	15.4	36.4	19.6	6.6
Carna	17.2	14.4	26.1	27.9	14.4
Drumfinn	18.4	12.4	27.2	26.9	15.1
Chapelizod	14.1	7.9	44.6	19.5	14.0
Decies	18.3	11.4	29.5	25.4	15.5
Inchicore A	16.1	8.6	39.2	21.4	14.7
Inchicore B	18.7	13.0	30.9	25.4	12.0
Kylemore	18.8	14.0	27.1	25.3	14.7
Kilmainham A	16.3	10.7	34.2	24.7	14.2
Kilmainham B	13.7	8.5	51.6	17.4	8.7
Kilmainham C	17.0	12.5	41.9	18.4	10.5
Phoenix Park	7.0	8.0	53.3	12.8	16.5
Ushers A	8.2	10.3	65.1	11.1	5.2
Ushers B	13.3	10.1	57.3	16.0	3.3
Ushers C	18.7	63.4	45.4	18.0	6.1
Ushers D	16.0	79.1	43.2	20.7	7.5
Ushers E	18.9	12.5	36.0	22.6	10.0
Ushers F	9.8	9.3	38.1	21.8	21.0
Arran Quay B	11.2	12.9	55.4	15.4	5.1
Arran Quay C	7.7	15.7	61.8	11.7	3.2
Arran Quay D	9.5	9.5	44.6	24.6	11.8
Arran Quay E	11.1	8.8	51.6	18.1	11.3
Cabra West B	10.9	9.2	19.2	17.0	12.7
Cabra West C	17.1	14.7	28.8	24.1	15.2
Cabra West D	15.0	11.0	34.4	25.4	14.1
Cabra East A	11.4	12.3	44.7	20.7	10.9
Cabra East B	16.2	11.2	32.4	23.9	16.1
Cabra East C	11.3	13.2	43.7	22.1	9.7
Botanic A	14.6	11.9	33.3	22.7	17.5
Botanic B	13.9	14.5	35.0	23.6	13.0
Botanic C	13.1	15.6	42.4	21.1	7.8
Inns Quay A	6.1	15.2	45.3	16.7	16.7

Area	Age 0-14 (%)	15-24 (%)	25-44 (%)	45-64(%)	65+ (%)
Total (average %):	16.5	15	39.0	20.6	11.0

Source: CSO.ie

7.4.2. Land Use Change and Settlement Patterns

Hazelhatch, on the border between County Kildare and South Dublin marks the western extent of the DART+ South West Project. The area is subject to the Kildare County Development Plan 2017-2023 (the KCDP) and the South Dublin County Development Plan 2022-2028 (the SDCDP). As the rail line approaches Dublin's city centre, it enters the administrative area of Dublin City Council and is subject to the Dublin City Development Plan 2022-2028 (the DCDP). The three relevant Development Plans (KDCP, SDCDP and DCDP) provide a spatial framework for land use and future settlement patterns along the railway corridor.

The railway corridor does not have a specific zoning objective but is identified on the relevant zoning maps as an existing railway corridor.

For the purposes of describing the Receiving Environment in relation to Land Use Change and Settlement Patterns, the Study Area is considered under the following four geographic areas as set out in Chapter 4 Project Description:

- **Zone A -** Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station;
- **Zone B** - Park West & Cherry Orchard Station to Heuston Station (incorporating Inchicore Works);
- **Zone C** – Heuston Yard & Station (incorporating New Heuston West Station); and
- **Zone D** - Liffey Bridge to Glasnevin Junction (Phoenix Park Tunnel Branch Line).

7.4.2.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

This section of the railway extends between Hazelhatch & Celbridge Station and Park West & Cherry Orchard Station. The line passes through a number of stations including Hazelhatch & Celbridge Station, Adamstown Station, Kishoge Station (not currently in use), Clondalkin / Fonthill and Park West & Cherry Orchard Station. There are also ten road overbridges and footbridges which link areas both north and south of the railway line.

Celbridge's town centre is located circa 2km to the north west of where the DART+ South West Project commences at Hazelhatch & Celbridge Station. With a population of over 20,000 it is the third largest town in County Kildare. The Local Area Plan (LAP) for Celbridge (*Celbridge Local Area Plan 2017-2023*) identifies several Key Development Areas (KDA) around the town, with KDA 2 Ballyoulster and KDA 5 Simmonstown located to the south of the River Liffey between Celbridge town centre and Hazelhatch & Celbridge Station. These areas are identified to accommodate the future residential growth of the town and will see the settlement pattern of the urban area extend towards the railway station.

The area in the immediate vicinity around the railway station presently contains low density housing and lands in agricultural use, with the line passing Celbridge Elm Hall Golf Course and through the townland of Stacumny, continuing east toward Adamstown. Lands in this area are generally either not

zoned (where lands are within the administrative area of KCC) or are zoned RU: Rural which seeks "*to protect and improve rural amenity and to provide for the development of agriculture*" (where lands are within the administrative area of SDCC).

Lands to the north of the railway at Adamstown (to the west of the R120 (Newcastle Road) at Hanstead and Tullyhall) have witnessed significant residential development. The Adamstown area is a designated Strategic Development Zone (SDZ) which, when complete, will provide over 7,000 residential units and support local centres and community facilities over an area of approximately 223ha. To date, approximately 3,000 units have been completed. In recent years, development has been focused near the Adamstown Railway Station including a new urban village to be known as 'The Crossings' and apartment developments.

Continuing east, the line heads towards Kishoge Station (currently not in operation) and onwards to Clondalkin / Fonthill Station. Although undeveloped and greenfield in nature, this area is the location of Clonburris SDZ where significant future development is envisaged across an area of approximately 280 ha focused on the two railway stations (including 10,000 homes). Further afield to the north and south of these future development lands are established residential areas with supporting local centres, community and educational facilities.

As the line continues east, the landscape becomes more urban, with built-up industrial areas zoned 'EE - Enterprise and Employment' adjoining the railway. The line passes through Clondalkin Industrial Estate and then passes under the M50 into Park West & Cherry Orchard Station. At this point, the line enters Dublin City Council's administrative area.

7.4.2.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

East of the M50 motorway, the western end of this section begins at Park West & Cherry Orchard Station and runs east, through an area that is generally characterised by residential properties to the north (including Cherry Orchard Park) and industrial properties with a rich variety of employment opportunities to the south (including Park West).

The line passes under a footbridge at Cherry Orchard (linking Cherry Orchard Avenue to Park West Industrial Park) which provides an important link between residential and employment areas. It continues to pass under Le Fanu Road Bridge (OBC7) and Kylemore Road Bridge (OBC5A) which offer additional linkages between the residential areas of Ballyfermot with numerous industrial estates notably Kylemore Industrial Estate and Westlink Industrial Estate. The lands to the north of the line comprise of existing residential communities including properties along, *inter alia*, Cherry Orchard Crescent, Cherry Orchard Avenue, Clover Hill Road, Le Fanu Drive, Le Fanu Road, Kylemore Drive and Landen Road. To the south, the line is bounded by lands zoned Z6 – Enterprise and Employment and primarily comprise of Park West Industrial Park.

Circa 350m to the east Kylemore Road Bridge (OBC5A), Inchicore Works/ Depot front onto the existing rail line for circa 1km along its southern boundary. The complex provides several track infrastructure and related facilities for the maintenance of rolling stock (Intercity trains), and offices for Iarnród Éireann employees.

The lands to the south of the railway line at Zone B form part of the City Edge Project which seeks to create new urban space, with the potential for 40,000 new homes and 75,000 jobs – making it one of

the largest regeneration schemes in Europe. The western portion of these lands are identified in the DCDP as a Strategic Development Regeneration Area (SDRA 4) and is zoned Z14 – "*to seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and "Z6" [Enterprise and Employment] would be the predominant uses*".

From here, the rail line continues east to pass under Khyber Pass Footbridge (OBC5), over Sarsfield Road Bridge (UBC4) and under Memorial Road Bridge (OBC3) where the line begins to run parallel to the Chapelizod Bypass. While the area to the south of the line at Kilmainham is predominately residential, a more varied mix of land uses is included in the area nearest to the railway line as the city centre is approached.

The line then approaches the South Circular Road with two bridges carrying traffic over the railway – South Circular Road Bridge (OBC1A) and St John's Road Bridge (OBC0A). Notable land uses in close proximity to the project in this area include the Irish National War Memorial Park and the Royal Hospital Kilmainham (and its associated gardens), as well as St. John of God Special School. Higher density residential developments have recently been constructed in the area with an example being the Clancy Quay development at the former Clancy Barracks to the north of the railway corridor.

7.4.2.3. Zone C – Heuston Yard & Station

The line takes a more northerly direction as it approaches the area where the Phoenix Park Tunnel Branch Line merges with lines into / out of the existing Heuston Station. There are a number of stabling facilities and yard areas associated with Heuston Station and an interface with the Luas red line to the east of the station building itself. The land use for the western portion of this area is zoned Z10, with an objective that seeks "*to consolidate and facilitate the development of inner city and inner suburban sites for mixed-uses, with residential the predominant use in suburban locations, and office/ retail/ residential the predominant uses in inner city areas".* The eastern portion of this area is zoned Z5, with an objective that seeks *"to consolidate and facilitate the development of the central area and to identify, reinforce, strengthen and protect its civic design character and dignity*". The area is also identified as a Strategic Development Regeneration Area (SDRA 7) for which a masterplan has been prepared.

7.4.2.4. Zone D –Liffey Bridge to Glasnevin Junction

From Liffey Bridge (UBO1), the line continues northwards over the River Liffey and under Conyngham Road Bridge (OBO2) where it enters the Phoenix Park Tunnel. The Phoenix Park Tunnel extends 690m under the Phoenix Park and has historically been used for freight and maintenance, however, it reopened in 2016 for regular passenger traffic.

Close to the junction of the Cabra Road and Navan Road the line exits the Phoenix Park Tunnel and continues north under several road bridges. An Garda Siochána headquarters and McKee Barracks are located to the west. The surrounding area is otherwise predominantly residential with supporting local services.

From the northern end of the Phoenix Park Tunnel, the railway corridor is almost entirely located within steep cuttings (i.e., the level of the tracks is below the surrounding ground level). Bridges along this northern section of the line include McKee Barracks Bridge (OBO3), Blackhorse Avenue Road Bridge (OBO4), Old Cabra Road Bridge (OBO5), Cabra Road Bridge (OBO6), Faussagh Road Bridge

(OBO7), Royal Canal and Luas Twin Arch (OBO8), the Maynooth Line Twin Arch (OBO9) and heading east, under the Glasnevin Cemetery Road Bridge (OBO10).

At this point, Glasnevin Cemetery is located to the north of the rail corridor while Prospect Cemetery is located on the inside bend of the existing line to the south. The line then continues east where it interfaces with the proposed DART+ West Project at Glasnevin Junction.

7.4.3. Journey Characteristics and Journey Amenity

Census 2016 quantitative and qualitative data on commuting in Ireland was reviewed. The report states that "*the average commute for those at work rose in 2016 to 28.2 minutes, having fallen between 2006 (27.5mins) and 2011 (26.6mins)*". It goes on to state that "*counties bordering Dublin had the longest average commuting time*". Data on journey time to work, school, or college was reviewed for the administrative areas of Dublin City, South Dublin and County Kildare. Average journey times for the population of County Kildare is the highest at just under 34 minutes, South Dublin at almost 31 minutes, and Dublin City at nearly 29 minutes, on average.

In 2016, the top 12 no. large towns in Ireland (with population of over 10,000 persons) have been identified where the highest percentage of workers commute for over an hour to their places of work. Celbridge is ranked ninth, with journeys for 18.6% of workers residing in Celbridge being over an hour long.

Census 2016 data on time leaving home was reviewed for Dublin City, South Dublin, and Kildare. As detailed in Figure 7-2 the majority of the population leave for work between the hours of 08:01 – 08.30 (20.7% on average) followed by 08.31 – 09.00 (19.4% on average) and 07:31 – 08:00 (14.9% on average). These times correspond with the increase in traffic conditions / congestions patterns and the proximity of work, school, or college to the place of residence.

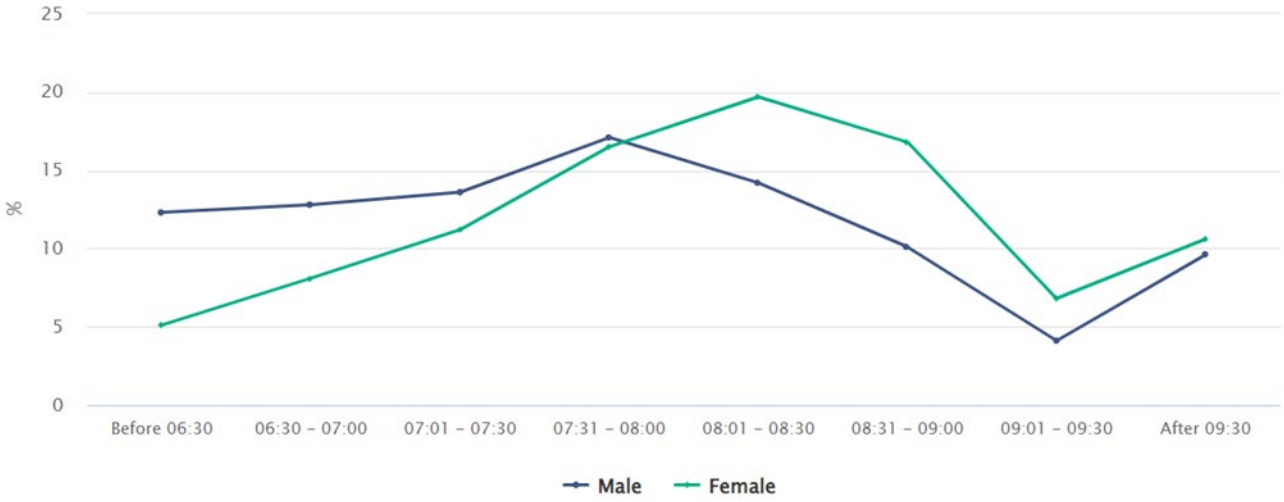


Figure 7-2 Percentage breakdown of departure times, male and female commuters, 2016. Source: CSO Ireland

7.4.4. Community Infrastructure (including Local Services and Amenity)

There is a wide range of local services and amenities (Social Infrastructure) within the neighbouring communities along the railway corridor including:

- Primary and secondary schools and other education facilities (discussed in Section 7.4.4.1);

- Creches and other childcare facilities (discussed in Section 7.4.4.2);
- Community and youth centres (discussed in Section 7.4.4.3);
- Sports clubs, playing pitches, public parks and other outdoor recreational facilities (discussed in Section 7.4.4.4 and Section 7.4.4.5);
- Hospitals, clinics, GPs, pharmacies and other healthcare services (discussed in Section 7.4.4.6);
- Garda stations and other emergency services (discussed in Section 7.4.4.7); and
- Places of worship (discussed in Section 7.4.4.8).

7.4.4.1. Educational Facilities

A review of educational facilitates within the Study Area, facilitated through GIS datasets and Google Maps, has shown a total of 41 no. educational facilities consisting of 2 no. Special Educational Needs (SEN) schools, 27 no. Primary Schools, 11 no. Secondary Schools and 8 no. Higher Education / other educational facilities. The locations of these facilities are listed in Table 7.5 and illustrated in Figure 7-3.

7.4.4.1.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Between Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station there are 9 no. Primary Schools, 4 no. Secondary Schools, 1 no. Higher Education / Other facility and 1 no. SEN School. After Adamstown Station there are 3 no. schools, Adamstown Community College (identified as no. 8 in Figure 7-3), St. John the Evangelist National School (no. 17) and Adamstown Castle Educate Together National School (no. 18) which are within 50m of the railway corridor and 600m from Adamstown Station. St Peter Apostle SEN National School (no. 40) located within the Clondalkin-Rowlagh ED is located c. 480m from Clondalkin / Fonthill Station.

7.4.4.1.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

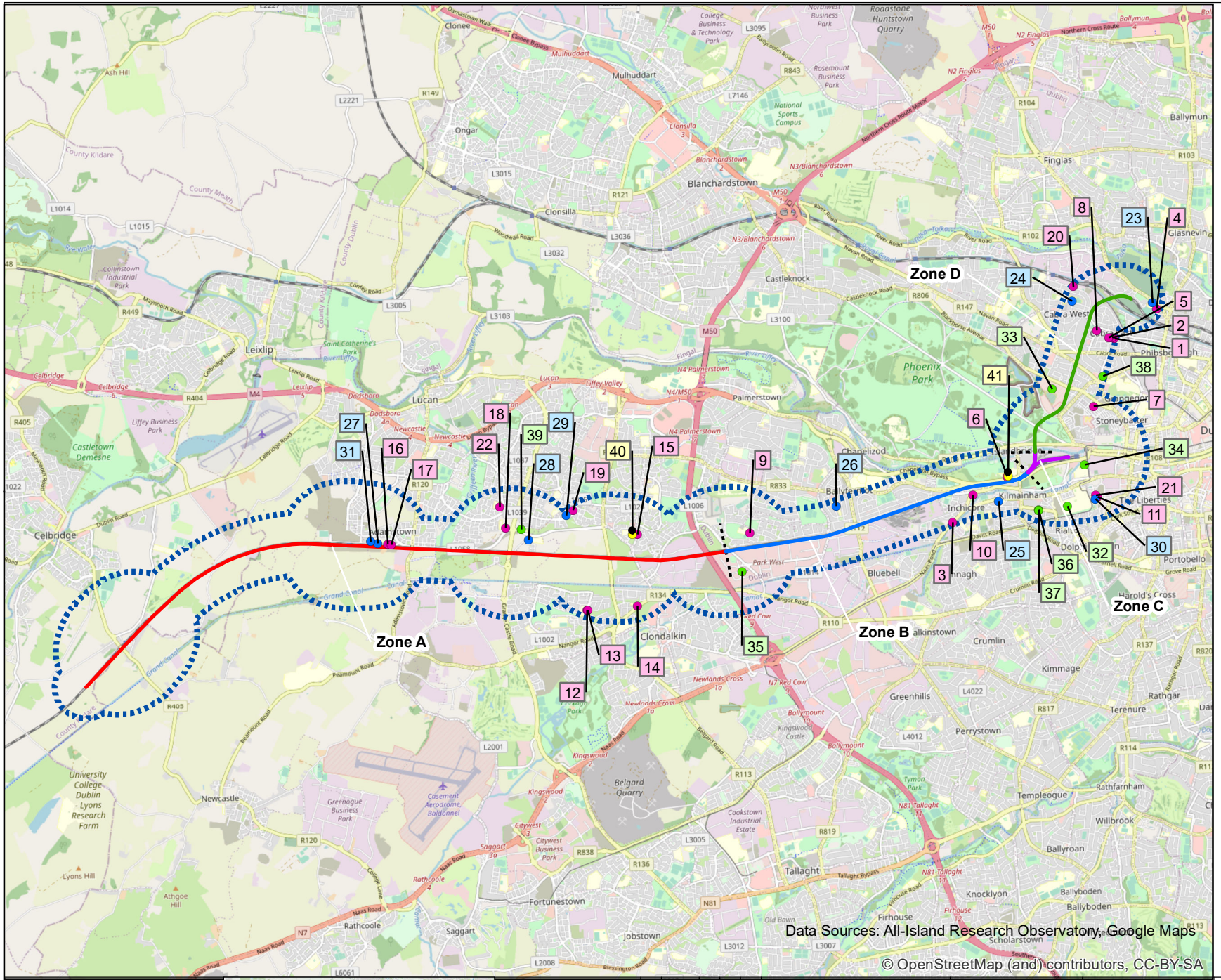
Within the Park West & Cherry Orchard Station to Heuston Station segment of the railway corridor there are 4 no. Primary Schools, 2 no. Secondary Schools, 3 no. Higher Education/ Other Facilities and 1 no. SEN School. St. John of God Special School (no. 41) is located on the opposite side of the Chapelizod Bypass to the railway line and at a distance of c. 90m to the north of the track.

7.4.4.1.3. Zone C - Heuston Yard & Station

Within the Heuston Yard & Station segment of the railway corridor, there are 2 no. Primary Schools, 1 no. Secondary School, and 2 no. Higher Education / Other facilities. The HSE Office of the Nursing and Midwifery Services Director (ONMSD) (no. 34) is located c.180m southeast of the track.

7.4.4.1.4. Zone D - Liffey Bridge to Glasnevin Junction

From Liffey Bridge (UBO1) to Glasnevin Junction there are 11 no. educational facilities including 7 no. Primary Schools, 2 no. Secondary Schools and 2 no. Higher Education/ Other facilities. The closest primary school to the railway corridor is Gaelscoil Bharra (c. 85m from the line), and the closet secondary school to the railway corridor is St. Vincent's C.B.S Glasnevin (c. 270m from the line).



Legend

- Special Educational Need Schools
- Higher Education/ Other
- Secondary Schools
- Primary Schools
- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

N W E S

DART+ South West

NTA | Tionscadal Éireann Project Ireland 2040

Rev	Date	Drn	Ch'k'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Educational Facilities within Buffer
v02	08/09/2022	JS	CH	VB	Educational Facilities within Buffer
v01	04/07/2021	MV	CH	VB	Educational Facilities within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA | ATKINS | TNO RAIL — Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:85,000 @ A4	JS	CH	VB

Project Code	Issuer	QMS Code
5195886	TTA	

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.3: Educational Facilities within 500m of the Track and 1km from Existing Station**

Drawing File Name	Version	Status
DP-04-23-DWG-EV-TTA-23769	v03	S3

Table 7.5: Name of Educational Facilities within 500m of the Track and 1km from Existing Station

Map Reference Number	Name – Primary School
1	Christ The King Boys National School
2	Christ The King Girls National School
3	Scoil Muire Gan Smal
4	St. Vincent's Primary School
5	Christ The King
6	Gaelscoil Inse Chor
7	St Gabriels National School
8	Gaelscoil Bharra
9	St, Ultan's National School
10	Inchicore National School
11	St. James's Primary School
12	Scoil Nano Nagle
13	Talbot Senior National School
14	Our Lady Queen of Apostles
15	Neillstown National School
16	St. John the Evangelist National School
17	Adamstown Castle Educate Together National School
18	Lucan East ETNS
19	Divine Mercy Junior National School
20	Broombridge Educate Together School
21	Mater Dei National School
22	Griffeen Valley Educate Together National School
Reference Number	**Name – Secondary School**
23	St Vincents C.B.S. Glasnevin
24	Cabra Community College
25	Inchicore College of Further Education
26	Ballyfermot College of Further Education
27	Adamstown Community College
28	Kishoge Community College
29	Divine Mercy Senior School Ballyfermot College of Further Education
30	CBS James Street Adamstown Community College
31	Kishoge Community School

Reference Number	Name - Higher Education
32	Centre for Learning and Development - St. James Hospital
33	Defence Forces School of Catering
34	Office of the Nursing and Midwifery Services Director (HSE NDTP)
35	REHAB Group (National Learning Network)
36	Services Industrial Professional & Technical Union College
37	SIPTU Basic English Scheme
38	Technological University Dublin
39	Carline Learning
Reference Number	**Name – Special Education**
40	St Peter Apostle SEN NS
41	St John of God Special School Kilmainham

7.4.4.2. Childcare Facilities

Within the overall study area there are a total of 75 no. childcare facilities identified on Pobal's database, the locations of these facilities listed in Table 7.6 and are shown in Figure 7-4. Childcare facilities within the study area consist of Montessori schools, creches, playgroups and sessional childcare facilities.

7.4.4.2.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

From Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station there are 29 no. childcare facilities within the Study Area consisting of 7 no. Montessori schools 22 no. other childcare facilities. Within this section of the railway corridor, Giraffe Childcare Adamstown (identified as no. 36 in Figure 7-4) is the closest facility to the railway at c. 118m.

7.4.4.2.2. Zone B - Park West & Cherry Orchard to Heuston Station

From Park West & Cherry Orchard to Heuston Station there are 16 no. childcare facilities within the Study Area, consisting 2 no. Montessori and 14 no. other childcare facilities. There is a high concentration of facilitates in Ballyfermot, a residential area that is densely populated.

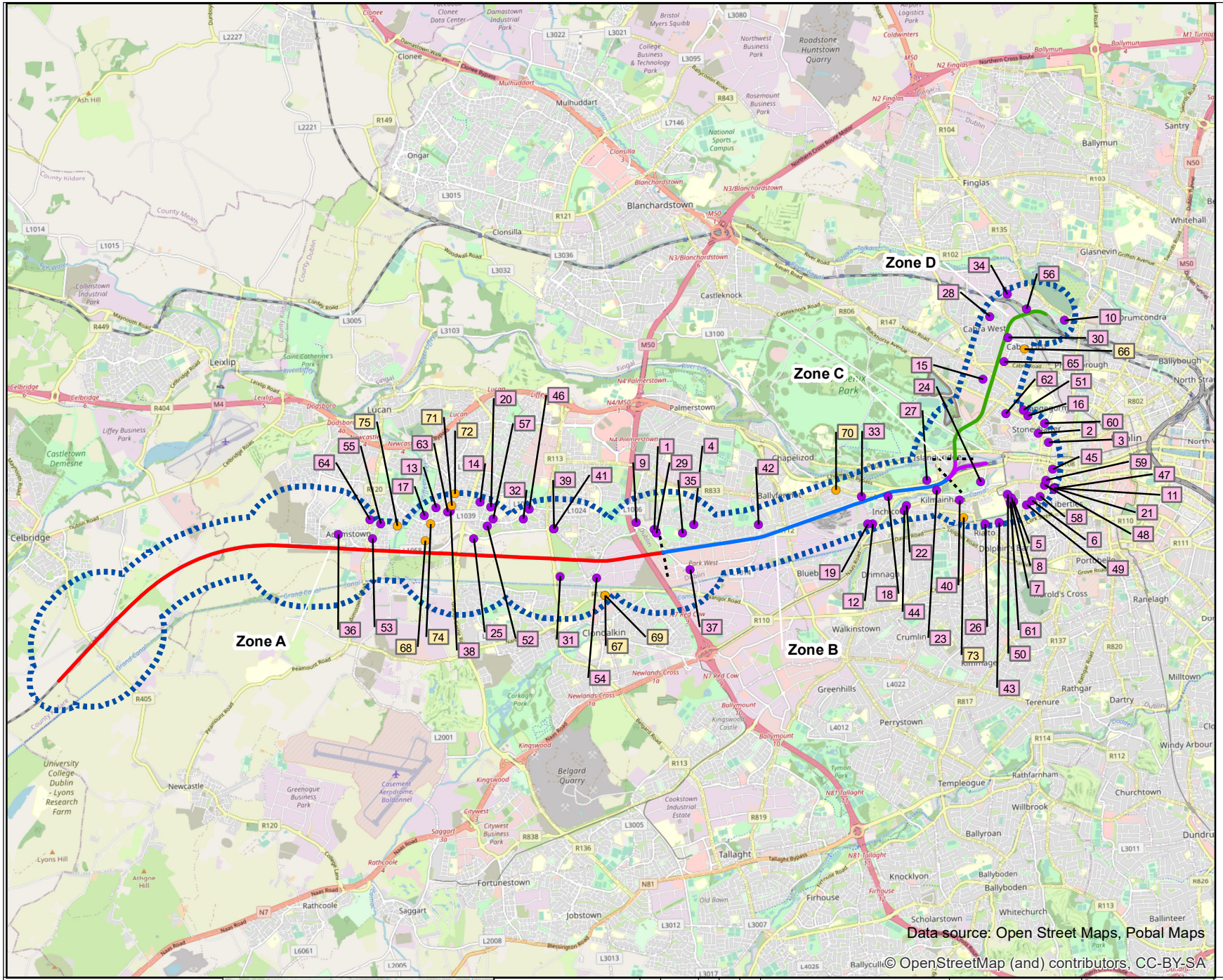
The Eden Early Learning Centre (no. 18), Safari Childcare Kilmainham (no. 23) and Naionra Bogha Baisti (no. 27) are the closest facilities to the railway corridor. These 3 no. facilities are less than 300m from the line.

7.4.4.2.3. Zone C - Heuston Yard & Station

There are 16 childcare facilities within the Heuston Yard and station area. The closest facility to the track is Safari Childcare – Heuston South Quarter (no. 24) which is located approximately 230m south from the track.

7.4.4.2.4. Zone D - Liffey Bridge to Glasnevin Junction

From Liffey Bridge (UBO1) to Glasnevin Junction there are total of 14 no. childcare facilities including 1 no. Montessori school and 13 no. other childcare facilities. Naionra Bharra (no. 30) and Bee Happy Playschool (no. 56) are both within 100m of the track.



Legend

- Montessori
- Other Childcare Facilities
- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

N W E S

DART+ South West

NTA | Transaid Éireann Project Ireland 2040

Rev	Date	Drn	Ch'k'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Childcare Facilities within Buffer
v02	08/09/2022	JS	CH	VB	Childcare Facilities within Buffer
v01	04/07/2022	MV	CH	VB	Childcare Facilities within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA | ATKINS | TNO RAIL

Supported by: rps

Date: 01/11/2022 | Scale: 1:90,000 @ A4 | Drawn: JS | Checked: CH | Approved: VB

Project Code: 5195886 | Issuer: TTA | QMS Code:

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.4: Childcare Facilities within 500m from the Track and 1km from Existing Stations**

Drawing File Name: DP-04-23-DWG-EV-TTA-23770 | Version: v03 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

Table 7.6: Name of Childcare Facilities within 500m of the Track and 1km from Existing Station Childcare Facilities

Reference Number	Name - Other Childcare
1	Babes in the Wood Creche
2	Kent Playgroup Ltd / Rainbow Playgroup
3	Little Stars
4	Cherry Orchard Community Childcare Services Ltd
5	SICCDA Afterschool – San Seamus
6	Fountain Resource Group Marrowbone Lane Youth Project
7	Fountain Resource Group Junior Youth
8	Fountain Resource Group Wee Tots
9	St. Oliver's Park After Schools
10	Tigers Preschool @ St. Vincents
11	Saorise Waldorf School
12	Oblates Community Playgroup
13	Naionra Matters
14	Lively Ladybirds Daycare
15	Jumblies
16	Tiny Toes Creche
17	Eden Early Learning Centre
18	Oblate Fathers Community Creche
19	Happy House
20	SICCDA Afterschool – 92 Meath Street
21	Children's Project
22	Safari Childcare Ltd – Kilmainham
23	Safari Childcare Ltd – Heuston South Quarter
24	Lucan East Pre-School – After School
25	Dolphin Creche
26	Naionra
27	Naoinra ogha Baisti
28	Fledgings Colaiste Eanna
29	Babes in the Woods Creche
30	Naoinra Bharra
31	Cappaghmore Playschool
32	Beechtree Community Childcare

33	Little Oaks
34	Lollipop Lane
35	Saint Ultan's Childcare Project
36	Giraffe Childcare – Adamstown
37	Giraffe Childcare – Park West
38	Giraffe Childcare – Griffeen
39	Ronanstown W CDP Creche
40	Little Stars
41	Ronanstown Community Childcare Centre
42	Treasure Tots Nursery
43	Fatima Homework Club
44	The Family Resource Centre Creche and Afterschool
45	Robert Emmet CDP Afterschool
46	Hansel & Gretel Playschool
47	SICCDA Afterschool
48	Solas Afterschool Project – St. Catherine's
49	Solas Afterschool Project – Marrowbone Lane
50	Solas Afterschool Project – Basin Street
51	Seven Dwarfs Community Playgroup
52	Happy Tots
53	Busy Kids Creche
54	The Haven Preschool
55	Finnstown Childcare
56	Bee Happy Playschool
57	B's Babes Childcare
58	Early Days / School St. After Schools
59	Fountain Resource Group Bizzy Bees Afterschool
60	Creative Kids & Co
61	Creative Kids & Co
62	Dunard Community Playgroup
63	Sherpa Kids Griffeen Valley Educate
64	Gate Lode Pre-School
65	Bo Peep's Creche

Reference Number	Name - Montessori
66	Early Learning Montessori
67	Naionra Montessori Cluain Dolcain
68	Tullytots Montessori
69	Footprints Montessori & Afterschool
70	Mini Miracles Creche & Montessori
71	Precious Minds Creche & Montessori School
72	Griffeen Valley Montessori
73	Mayfield Montessori
74	Little Hands Montessori
75	Realta Montessori

7.4.4.3. Community and Youth Centres

A search for community and youth centres along the railway track was facilitated through Google Maps and Open Street Map (and validated via a site visit). This search showed that within the Study Area there are 12 no. community and youth centres which includes Adamstown Community Centre, Cherry Orchard Community Centre, Ballyfermot Youth Services, St. John Bosco Community Centre and Cabra Community Centre as shown in Figure 7-5. Community and youth centres are located in higher density residential areas where the younger members of these communities can avail of its services easily. Community centres are often serviced with meeting rooms, sports halls and other amenities and services which aim to bring the people of the surrounding community together.

7.4.4.3.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

From Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station, there are 3 no. Community Centres within the study area. Adamstown Community Centre is the closest Community Centre to the railway track (c. 30m).

7.4.4.3.2. Zone B - Park West & Cherry Orchard to Heuston Station

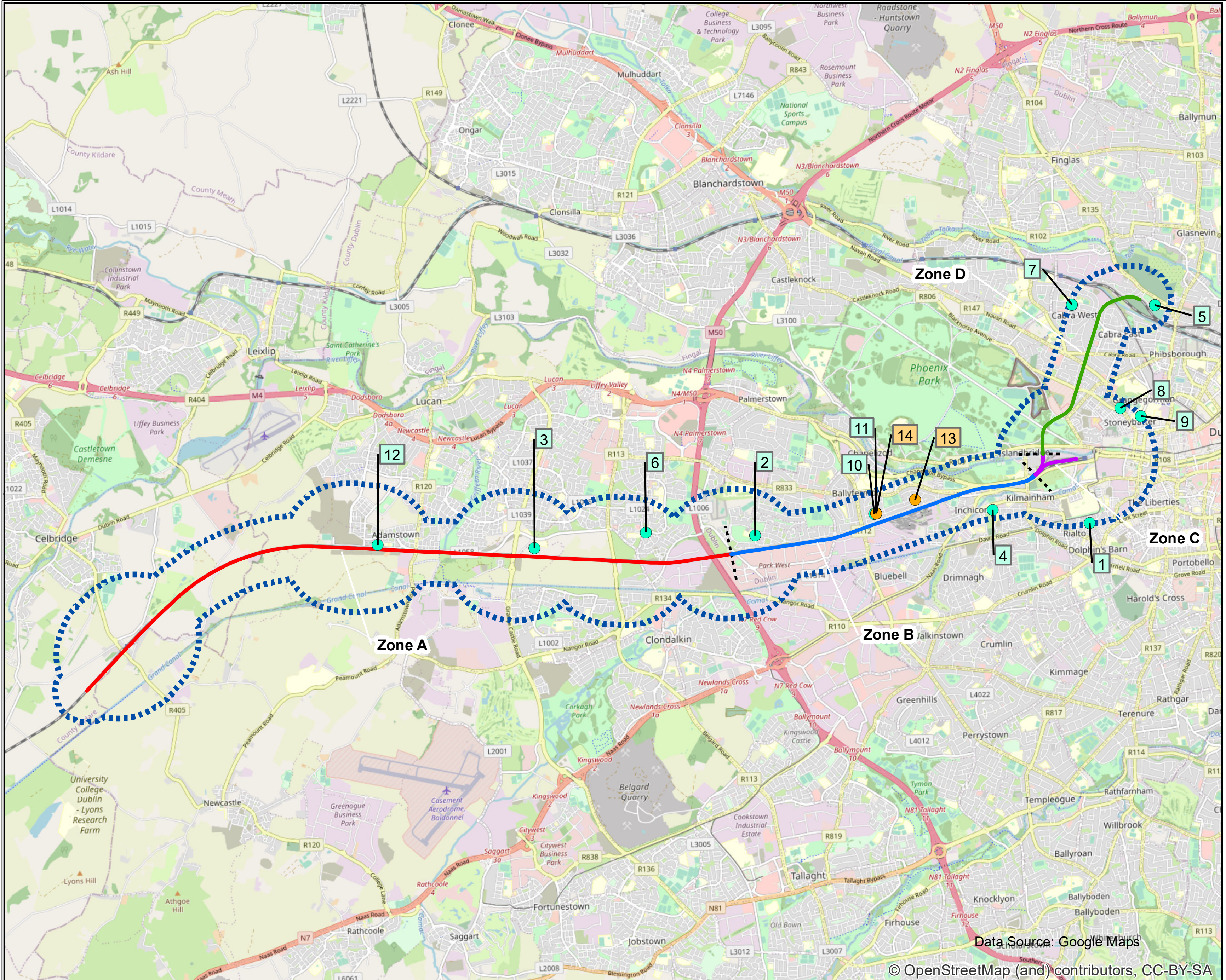
From Park West and Cherry Orchard to Heuston Station, there are 4 no. Community Centres including Cherry Orchard Community Centre and St. John Bosco Community Centre. There are also 2 no. Youth Centres, namely Ballyfermot Youth Services (BYS) which is located on Decies Road (c. 158m from the railway track). BYS is a drop-in centre for the young people of Ballyfermot and provides a range of services from outdoor education programme, drop-in information centres, music and arts programmes, access to the Erasmus+ programme and a comprehensive drugs and peer education programme.

7.4.4.3.3. Zone C - Heuston Yard & Station

A study of Zone C which encompasses Heuston Yard & Station found 1 no. Community Centre within the study area, F2 Community Centre which is located at Reuben Plaza (c. 1km from the railway track).

7.4.4.3.4. Zone D - Liffey Bridge to Glasnevin Junction

From the Liffey Bridge (UBO1) to Glasnevin Bridge, there is 4 no. Community Centres located in the study area, namely Cabra West Parish Centre which is located on Kilkieran Road (c. 477m from the railway track).



Legend

- Youth Centres
- Community Centres
- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

Rev	Date	Drn	Chk'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Community Centres and Youth Services within Buffer
v02	08/09/2022	JS	CH	VB	Community Centres and Youth Services within Buffer
v01	04/07/2022	MV	CH	VB	Community Centres and Youth Services within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA ATKINS TUC RAIL
Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:85,000 @ A4	JS	CH	VB

Project Code: 5195886
Issuer: TTA
QMS Code:

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.5: Community and Youth Centres within 500m of the track and 1km from Existing Stations**

Drawing File Name: DP-04-23-DWG-EV-TTA-23771
Version: v03
Status: S3

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Table 7.7: Name of Community and Youth Centres within 500m of the track and 1km from Existing Stations

Reference Number	Name – Community Centre
1	F2 Community Centre
2	Cherry Orchard Community Centre
3	Lynch's Park Community Centre
4	St John Bosco Community Centre
5	Alzheimer Café
6	Jigsaw Clondalkin
7	Cabra West Parish Centre
8	Manor Street Phoenix
9	The Sanctuary
10	Markiewicz Community Centre
11	Ballyfermot / Chapelizod Partnership
12	Adamstown Community Centre
Reference Number	**Name – Youth Centre**
13	Ballyfermot Youth Service
14	A.B.L.E – About Ballyfermot Learning & Enjoyment Youth Development Project

7.4.4.4. Sports Clubs and Outdoor Recreation

Along the track from Hazelhatch & Celbridge Station to Glasnevin Junction there is a wide range of sports facilities and public parks as listed in Table 7.8 shown in Figure 7-6.

7.4.4.4.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Within 1km of the Hazelhatch & Celbridge Station is Celbridge & District Tennis Club (no. 13) and Celbridge Golf Club (no. 14) shown in Figure 7-6.

Moving from Hazelhatch & Celbridge toward Park West & Cherry Orchard Station there are an additional 12 no. sports facilities including football clubs, GAA clubs, basketball and boxing clubs as shown in a search facilitated by Google Maps. There is also a general sports facility located within Collinstown College Park Community College (also referred to as Ballyowen Astro Pitches) where a number of sport teams play, including Collinstown Football Club.

7.4.4.4.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

From Park West & Cherry Orchard Station to Heuston Station there are 14 no. sports facilities including Oblate Basketball Club (no. 16), Liffey Gaels GAA Club (no. 21), St Patricks Athletic Football Club (no. 22) and CIÉ Sports and Social Club (no. 23). The CIÉ Sports and Social Club (no. 23) and Liffey Gaels Club (no.21) are both less than 100m from the railway corridor.

7.4.4.4.3. Zone C - Heuston Yard and Station

A study of Zone C which encompasses Heuston Yard & Station found 1 no. Sports Clubs and Outdoor Recreation Centre in the study area, namely St. Catherine's Boxing Club. The Boxing Club (no. 29) is approximately 1km southeast of the railway corridor.

7.4.4.4.4. Zone D - Liffey Bridge to Glasnevin Junction.

A study of Zone D found 7 no. sports facilities and parks within the study area. St Finbarr's GAA Club (no. 20) is located in the section of the Study Area between the east of St. John's Road Bridge (OBC0A) to Glasnevin Junction. The sports club is located less than 100m from the railway corridor.

7.4.4.5. Parks and Open Spaces

Figure 7-6 also identifies a number of parks for public use, however, it is also noted that there is a range of more informal open spaces along the existing railway corridor which provide an amenity for residents and workers in the area.

7.4.4.5.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

There are 3 no. public parks identified within Zone A. Griffeen Park (no. 1) is located in Lucan, and its southernmost point is located approximately 30m from the railway track. Collinstown Park (no.5) is located approximately 600m north of the track. Balgaddy Park (no. 4) is also identified in study Zone A and fronts onto the railway track.

7.4.4.5.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

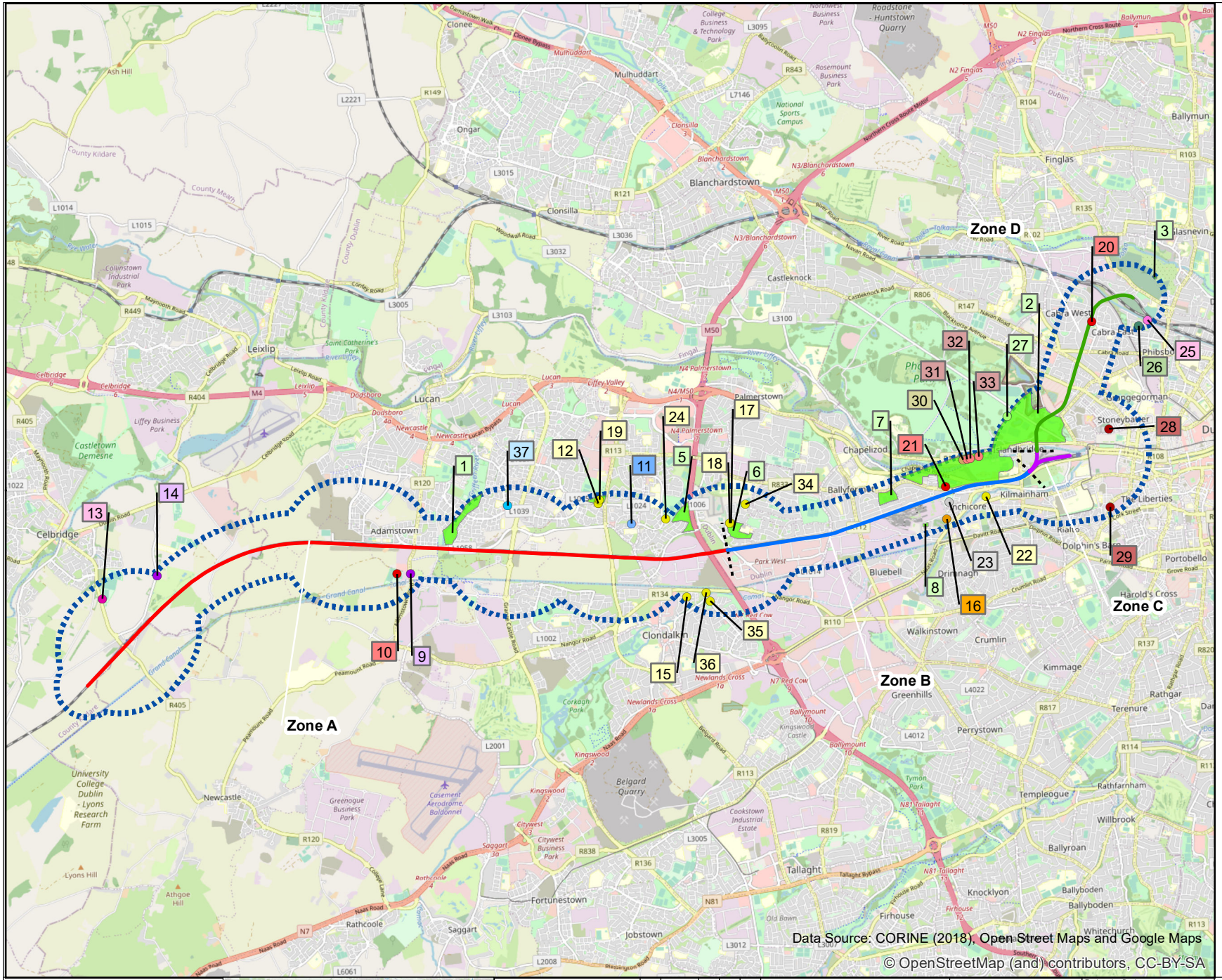
From Park West & Cherry Orchard Station to Heuston Station there are 4 no. public parks identified in the study area including Phoenix Park (no. 2), Cherry Orchard Park (no. 6), Jim Mitchell Park (no. 8), and Markievicz Park (no. 7). It should be noted that the Phoenix Park also crosses over into Zones C and D.

7.4.4.5.3. Zone C - Heuston Yard and Station (incorporating New Heuston West Station)

Phoenix Park (no. 2) which was identified in Zone B is present in Zone C.

7.4.4.5.4. Zone D - Liffey Bridge to Glasnevin Junction

Phoenix Park (no. 2) is present in the study area for Zone D. In addition, the National Botanic Gardens (no. 3) are located adjacent to the Glasnevin Cemetery and is approximately 490m north of the railway track.



Legend

Sports Facilities

- Rowing
- Boxing
- Cricket
- Triathlon
- Swimming
- Multi-sport
- Pitch and Putt
- Basketball Club
- Boxing Club
- Football Club
- GAA Club
- Golf Club
- Tennis Club
- General Sports

Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Zone B: Park Wet & Cherry Orchard Station to Heuston

Zone C: Heuston Station and Yard

Zone D: From Liffey Bridge to Glasnevin Junction

Zone Boundaries

Parks

500m Buffer from the Rail Line, 1000m Buffer from the Stations

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Rev	Date	Drn	Ch'k'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Sports Facilities and Parks within Buffer
v02	08/09/2022	JS	CH	VB	Sports Facilities and Parks within Buffer
v01	04/07/2022	NR	CH	VB	Sports Facilities and Parks within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA | ATKINS | TNO RAIL — Supported by: rps

Date: 01/11/2022 | Scale: 1:85,000 @ A4 | Drawn: JS | Checked: CH | Approved: VB

Project Code: 5195886 | Issuer: TTA | QMS Code

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.6: Sports Clubs and Parks within 500m of the Track and 1km from Existing Stations**

Drawing File Name: DP-04-23-DWG-EV-TTA-23772 | Version: v03 | Status: S3

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Table 7.8: Name of Sports Clubs and Parks within 500m of the Track and 1km from Existing Station

Reference Number	Name - Park
1	Griffeen Valley Park
2	Phoenix Park
3	National Botanical Gardens
4	Balgaddy Park
5	Collinstown Park
6	Cherry Orchard Park
7	Markievicz Park
8	Jim Mitchell Park
Reference Number	**Name - Sports Facility**
9	Lucan Pitch & Putt
10	Lucan Sarsfield GAA
11	Neilstown Boxing club
12	South Dublin Football League
13	Celbridge & District Tennis Club
14	Celbridge Golf Club
15	Ivy Trust YC FC
16	Oblate Basketball Club
17	Orchard Celtic Football Club
18	Bluebell United FC Limited
19	Liffey Valley Rangers FC
20	St Finbar's GAA
21	Liffey Gaels GAA
22	St Patricks Athletic Football Club
23	CIE Sports and Social Club
24	Collinstown Football Club
25	Cabra For Youth Ltd
26	Shandon Pitch and Putt Club
27	Phoenix Cricket Club
28	Arbour Hill Boxing Club
29	St Catherine's Boxing Club
30	Piranha Triathlon Club
31	Neptune Rowing Club

32	Commercial Rowing Club
33	Old Collegians Boat Club
34	Cherry Orchard Football Club
35	Castle Park Football Club
36	Newlands / Castle Park FC
37	Viking Swimming Club

7.4.4.6. Healthcare Services

Within 500m from the track, and within 1km of existing stations, there is an extensive range of healthcare services including hospitals, pharmacies, dentists, General Practitioners (GPs) and medical centres. Other healthcare services within the study area include addiction help services, wider HSE services including occupational therapy services and healthcare services associated with the Garda and Wheatfield Prison.

Healthcare services and other Social Infrastructure are often found grouped together, for example in a row of services including a convenience store, GP surgery and a pharmacy. Within the total study area there are 48 no. facilities, as illustrated on Figure 7-7.

7.4.4.6.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

From Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station there are 8 no. healthcare facilities including 4 no. GP surgeries and Medical Centres, 2 no. pharmacies and 1 no. other healthcare service (a medical centre associated with Wheatfield Prison which is identified as no. 48 in Figure 7-7).

7.4.4.6.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

Moving toward Dublin's city centre from Park West & Cherry Orchard Station to Heuston Station more healthcare services become available. Along this section of the route there are 16 no. healthcare facilities including 7 no. pharmacies, 2 no. dentists, 7 no. GP surgeries and medical centres, 2 no. hospitals and 4 no. other services.

Sarsfield Medical Centre (no. 33) and Corvin Medical Centre (no. 43) are within very close proximity to the track when passing Inchicore. The 2 no. medical centres are approximately 20m and 40m from the track.

7.4.4.6.3. Zone C - Heuston Yard & Station

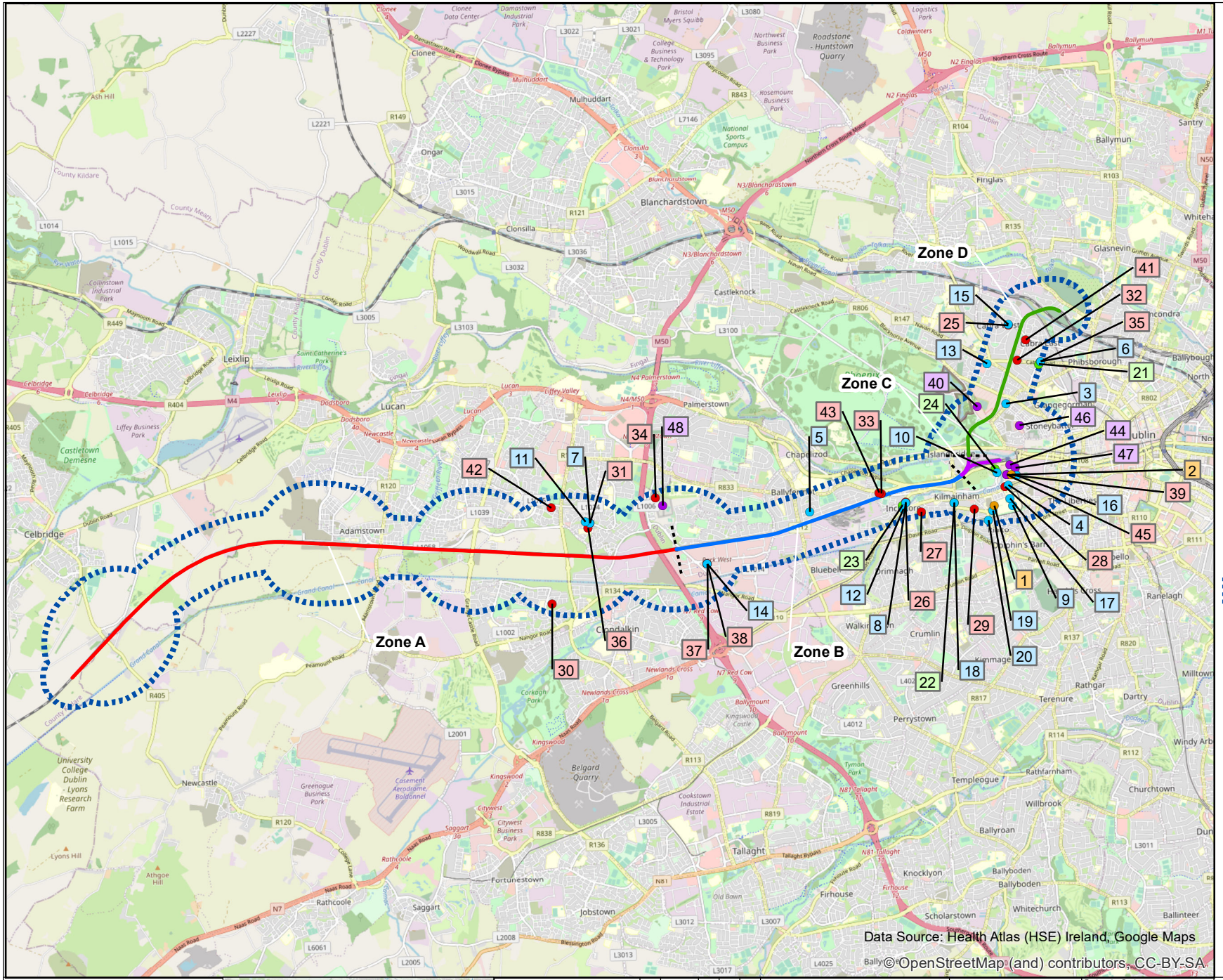
There are a number of other healthcare services situated in close proximity to Heuston Yard & Station notably, the Health Service Executive (HSE) Ireland Government Office, St. Patrick's University Hospital, Willow Grove Medical Health Adolescent Unit and the Infirmary and Surgeon's residence of the Royal Hospital Kilmainham.

St. James Hospital (no. 1) is located within c. 790m from Heuston Station, and St. Patrick's University Hospital (no. 2) is located within c. 520m from Heuston Station. St. James Hospital has plans for expansion, as part of this expansion a new children's hospital is currently under construction which will serve as the primary children's hospital for Ireland.

There are also 5 no. Pharmacies, 1 no. Dentist, 3 no. Medical Centres and GP Surgeries, and 2 no. Other Services located within this zone.

7.4.4.6.4. Zone D - Liffey Bridge to Glasnevin Junction

From Liffey Bridge (UBO1) to Glasnevin Junction there are 11 no. healthcare services including 4 no. pharmacies, 1 no. dentists and 4 no. GP surgeries and Medical Centres. Sirona Medical (no. 32) is located c. 113m from the track and Cabra Health Care Centre (no. 41) is located within c. 120m of the track.



Legend

- Hospitals
- Pharmacists
- Dentists
- Medical Centres and GP Surgeries
- Other Services
- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

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Rev	Date	Drn	Chk'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Healthcare Services within Buffer
v02	08/09/2022	JS	CH	VB	Healthcare Services within Buffer
v01	04/07/2022	MV	CH	VB	Healthcare Services within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: ATKINS (TYPSA, TNO RAIL) Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:90,000 @ A4	JS	CH	VB

Project Code	Issuer	QMS Code
5195886	TTA	

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.7: Healthcare Services within 500m of the track and 1km from Existing Stations**

Drawing File Name	Version	Status
DP-04-23-DWG-EV-TTA-23773	v03	S3

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Table 7.9: Name of Healthcare Services within 500m of the Track and 1km from Existing Station

Map Reference Number	Name – Hospitals
1	St James's Hospital Dublin
2	St. Patricks University Hospital
Map Reference Number	**Name – Pharmacy**
3	Byrne's Allcare Pharmacy
4	Cassidys Pharmacy
5	Crowley's Pharmacy
6	Daly's Pharmacy
7	DocMorris Pharmacy
8	Grattan Pharmacy
9	Guide Pharmacy, St James Hospital
10	HSQ Pharmacy
11	Hickey's Pharmacy
12	Keating's Pharmacy
13	Maple Pharmacy
14	Park West Pharmacy
15	Pelly's Pharmacy Ltd
16	Pharmacy Department - St. Patrick's Hospital
17	Pharmacy Department, St. James's Hospital
18	Phelan's Pharmacy
19	St. James's Late-Night Pharmacy
20	Walsh's Pharmacy
Reference Number	**Name - Dentist**
21	Cabra Dental Centre
22	Kilmainham Dental Studio
23	Inchicore Dental Centre
24	Dublin Dental Specialist Clinic
Reference Number	**Name – Medical Centres. and GP Surgeries**
25	Village Medical
26	Inchicore Medical Centre
27	Inchicore Family Doctors
28	St. James Medical Centre
29	Kilmainham Medical Centre,
30	Ashwood Surgery

31	Neilstown Surgery
32	Sirona Medical
33	Sarsfield Medical Centre
34	DOJ -Cloverhill Remand Prison Medical Centre
35	Cabra Medical Centre
36	Dr. Lynch and Harris Surgery
37	Park West Medical Centre
38	Park West Clinic
39	HSE - Primary Care Service
40	Occupation Health Dept. - Garda Occupational Health Service
41	Cabra Healthcare Centre
42	Lucan Healthcare Centre
43	Corvin Medical Centre
44	HSE – Addiction Centre
45	HSE – Addiction Services
46	Defence Forces – Bricins Military Hospital
47	HSE – Occupational Health Department
48	DOJ – Wheatfield Prison Medical Centre

7.4.4.7. Emergency Services

Within the study area there are a total of 4 no. emergency services as listed in Table 7.10 and shown in Figure 7-8.

7.4.4.7.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Ronanstown Garda Station (no.2) is identified as an Emergency Service within Zone A. The station is located on St. Ronan's Avenue and is approximately 536m from the trailway line.

7.4.4.7.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

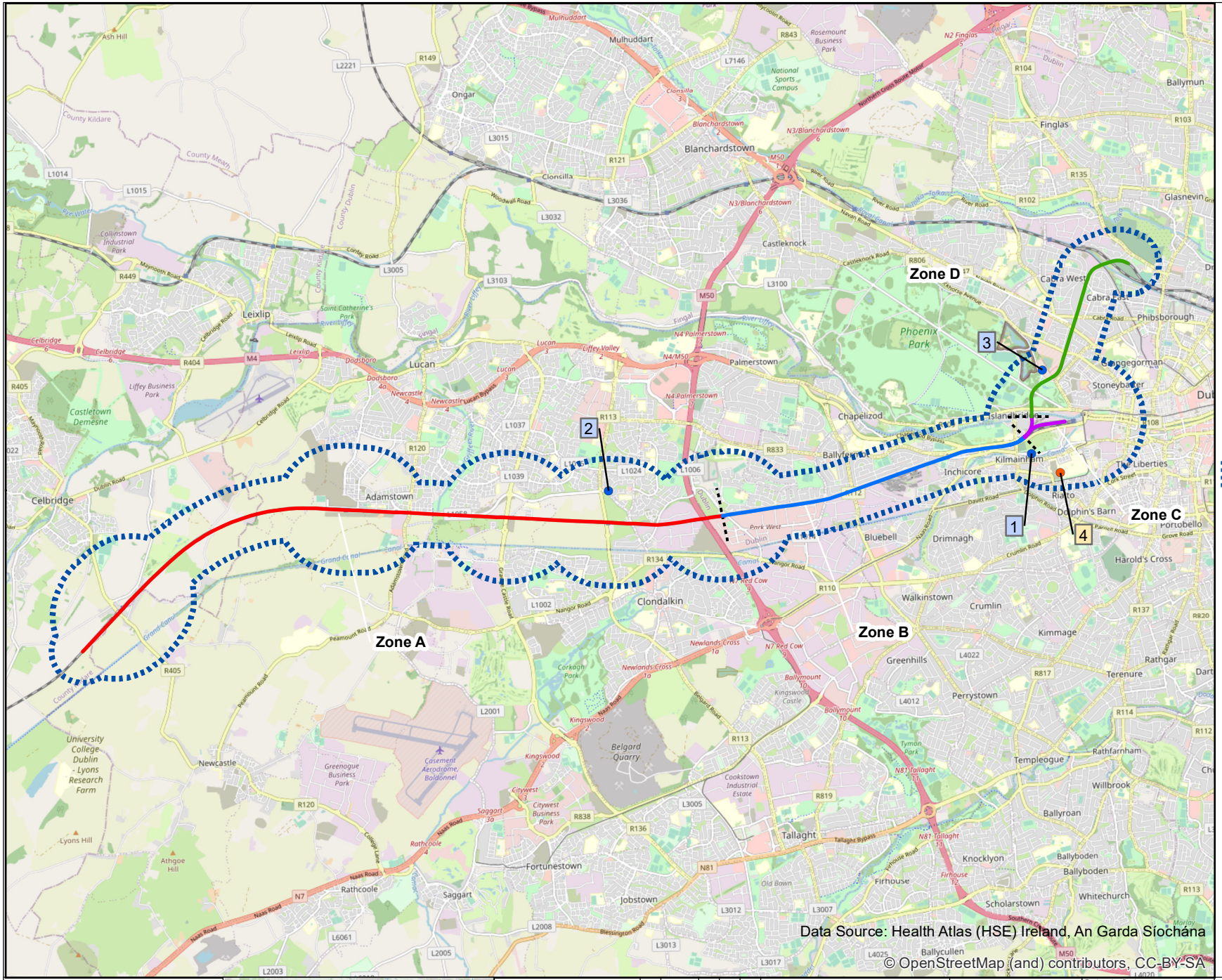
There were no Emergency Services found within the study area of Zone B of the railway track.

7.4.4.7.3. Zone C - Heuston Yard & Station

The study found 2 no. Emergency Services within Zone C, namely, Kilmainham Garda Station and the Accident and Emergency Department of St. James's Hospital. Kilmainham Garda Station is located on Kilmainham Road and is approximately 276 metres from the railway track.

7.4.4.7.4. Zone D - Liffey Bridge to Glasnevin Junction

There is 1 no. Emergency Service identified in Zone D. An Garda Siochána HQ is located in Phoenix Park and is approximately 50m from the track where the Phoenix Park Tunnel ends and moves towards the Blackhorse Avenue Bridge (OBO4).



Legend

- Garda Stations
- Emergency Departments
- Zone A: from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station
- Zone B: Park Wet & Cherry Orchard Station to Heuston
- Zone C: Heuston Station and Yard
- Zone D: From Liffey Bridge to Glasnevin Junction
- Zone Boundaries
- 500m Buffer from the Rail Line, 1000m Buffer from the Stations

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Rev	Date	Drn	Ch'k'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Emergency Services within Buffer
v02	08/09/2022	JS	CH	VB	Emergency Services within Buffer
v01	04/07/2022	MV	CH	VB	Emergency Services within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: ATKINS (Member of the SNC-Lavalin Group) | TYPSA | TUC RAIL

Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:85,000 @ A4	JS	CH	VB

Project Code	Issuer	QMS Code
5195886	TTA	

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.8: Emergency Services within 500m from the Track and 1km from Existing Stations**

Drawing File Name	Version	Status
DP-04-23-DWG-EV-TTA-23774	v03	S3

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Table 7.10: Name of Emergency Services within 500m of the Track and 1km from Existing Station

Map Reference Number	Name - Garda Station
1	Kevin Street Garda Station
2	Ronanstown Garda Station
3	Garda Siochana Head Quarters Glasnevin
Map Reference Number	**Name - Emergency Department**
4	St James's Hospital

7.4.4.8. Places of Worship

There are 18 no. of places of worship along the track exclusive to all ethnic communities. A review of places of worship along the track was facilitated by Google Maps and are listed in Table 7.11 and shown in Figure 7-9.

Places of worship are predominantly located in South Dublin and Dublin City where there is higher concentration of people. The Christian church is the most common place of worship along the line with 14 no. places whilst there is 1 no. Orthodox church, 1 no. Mormon church, 1 no. Mosque and 1 no. prayer centre.

7.4.4.8.1. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

There are 5 no. places of worship identified in Zone A. There are no places of worship in County Kildare, moving from Hazelhatch & Celbridge towards Dublin, the first place of worship is RCCG Chapel of Restoration (no. 10) in Adamstown. The RCCG Chapel of Restoration is the closest place of worship to the track in Zone A and is located approximately 320m from the track.

7.4.4.8.2. Zone B - Park West & Cherry Orchard Station to Heuston Station

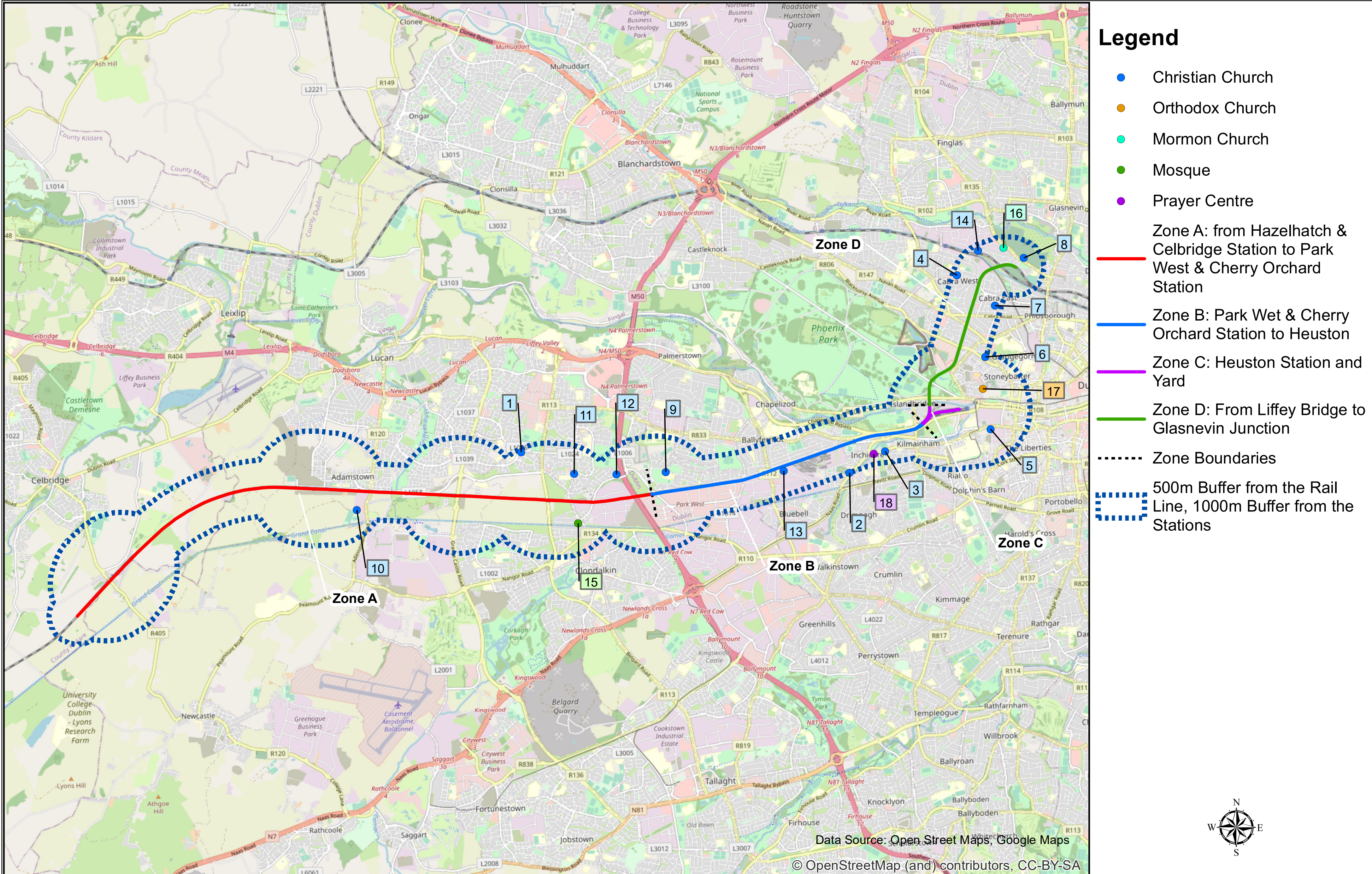
There are 5 no. places of worship identified in Zone B. Victory Outreach Church (no. 13) located off Kylemore Road is the closest place of worship to the track at approximately 77m.

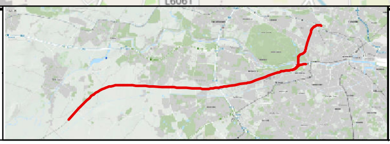
7.4.4.8.3. Zone C - Heuston Yard & Station

There is 1 no. place of worship place of worship identified in Zone C. St James's Roman Catholic Church (no.5) is located on James's Street North and is approximately 459m from the track.

7.4.4.8.4. Zone D - Liffey Bridge to Glasnevin Junction

There are 7 no. places of worship identified in Zone D. The church of Latter-Day Saints (no. 7) is located in Cabra East and is approximately 287m from the track.





DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v03	20/10/2022	JS	CH	VB	Places of Worship within Buffer
v02	08/09/2022	JS	CH	VB	Places of Worship within Buffer
v01	04/07/2022	MV	CH	VB	Places of Worship within Buffer

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS (Member of the SNC-Lavalin Group), TUC RAIL

Supported by: rps

Date	Scale	Drawn	Checked	Approved
01/11/2022	1:85,000 @ A4	JS	CH	VB

Project Code	Issuer	QMS Code
5195886	TTA	

Project Title: DART + SOUTH WEST

Drawing Title: **Figure 7.9: Places of Worship within 500m of the Track and 1km from Existing Stations**

Drawing File Name	Version	Status
DP-04-23-DWG-EV-TTA-23775	v03	S3

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Table 7.11: Places of Worship within 500m of the Track and 1km from Existing Station

Reference Number	Name - Place of Worship
1	Church of Divine Mercy (Christian Church)
2	Oblates Church (Christian Church)
3	Saint Michael's Church (Christian Church)
4	Church of the Most Precious Blood (Christian Church)
5	St James's Church (Christian Church)
6	Church of The Holy Family (Christian Church)
7	Christ the King (Christian Church)
8	Church of the Resurrection (Christian Church)
9	Church of the Most Holy Sacrament (Christian Church)
10	RCCG Chapel of Restoration (Christian Church)
11	Parish of Neilstown (Christian Church)
12	Zion Church Dublin (Christian Church)
13	Victory Outreach Church Dublin (Christian Church)
14	Open Heavens Dublin (Christian Church)
15	Alkhidmah Community Mosque (Mosque)
16	Church of Jesus Christ of Latter-Day Saints (Mormon Church)
17	Greek Orthodox Church of the Annunciation (Orthodox Church)
18	Share Prayer Ministry International (Prayer Centre)

7.4.5. Economic Activity (including Tourism and Employment)

The key areas of employment within the Study Area are primarily focused around urban areas and are located in the more compacted counties of South Dublin and Dublin City including Clondalkin Industrial Estate, Park West Business Park, Park West Industrial Estate, CIÉ lands and Dublin City Centre. A total of 422,404 workers resided in Dublin city centre and suburbs as recorded in April 2016 with Fingal and Kildare being the top two local authority administrative areas in which workers commute into Dublin city and suburbs.

Clondalkin Industrial Estate (in South Dublin County Council's administrative area) is located after (c. 700m) and to the east of the Clondalkin / Fonthill Station. The industrial estate is accessed from the Ninth Lock Road and Ninth Lock Road Bridge (OBC13) and is bound by the M50 Motorway to the east. Clondalkin Industrial Estate is home to a wide range of business including, *inter alia*, waste and recycling, storage, mechanical and production.

Park West Business Park is located adjacent to Clondalkin Industrial Estate segregated by the M50 and is the base location for the Head Quarters of both national and international companies including, *inter alia*, Applegreen, Boots, Monster Energy and Spar.

To the east of the M50 and to the south of the track is Park West Industrial Estate which is within the local authority area of Dublin City Centre. Similar to Clondalkin Industrial Estate, this area hosts a range

of business and services including, *inter alia*, recycling companies, Harvey Norman Park West Warehouse, electrical repair companies in addition to car parts and servicing companies.

Moving towards Dublin City Centre from Park West Industrial Park are CIÈ lands, commercial and retail uses along Kylemore Way and Kylemore Road.

The 2016 Census of Population was examined to determine trends in relation to employment including the number of people at work, unemployment levels and the sectoral composition of the population, based upon principal economic status.

Table 7.12 shows the overall unemployment rate as measured by the responses from 2016 Census. The unemployment rate is calculated by adding the number of people unemployed to first time job seekers, and then dividing the total by the overall labour force (i.e. total amount of unemployed persons and employed persons).

Table 7.12: Principle Economic Employment Status 2016

Principle Economic Employment Status (2016)	State	County Kildare	South Dublin	Dublin City
At work	2,0006,641	85,587	106,534	227,429
Looking for First Time Work	31,434	1,371	2,361	5,086
Unemployed or given up on previous job	265,962	6,359	8,757	46,613
Overall Unemployed	297,396	7,730	11,118	51,699
Labour Force	2,304,037	101,047	117,652	279,128
Unemployment Rate (%)	11.5%	13.1%	10.5%	5.4%

Source: CSO.ie

The average unemployment rate throughout the State was 11.5% in 2016. This is higher in Kildare at 13.1% and lower than both South Dublin (10.5%) and Dublin City (5.4%). Dublin City is well connected to all parts of Ireland through National Roads and Motorways including the M50, N11 and M1, Dublin Airport, Dublin Port and strategic infrastructure including bus services, DART, train services and Luas Services. These factors attract multi-national employers to the city and create job opportunities that consequently decreases the local unemployment rate.

The Quarterly National Household Survey (QNHS) and the Quarterly Labour Force Survey (QLFS) are designed to produce quarterly labour force estimates that include the official measure of employment and unemployment in the state. The figures are based on International Labour Organisation (ILO) definitions. The ILO unemployment rate for the State for the period 2016 - 2021 is summarised in Table 7.13. In Q3 2017, the QLFS replaced the QNHS and included enhancements to the survey methodology. It should be noted that the data in Table 7.12 excludes the associated Covid-19 Adjusted Employment Rate.

Table 7.13: ILO Economic Status Unemployment Rate for State 2016-2021

	Q1(%)	Q2(%)	Q3(%)	Q4(%)	Average %
2016	8.4	8.4	7.9	7.1	8.0
2017	6.8	6.2	6.7	6.4	6.9
2018	5.7	6.0	6.0	5.4	5.8
2019	4.8	5.4	5.2	4.5	5.0
2020	4.7	5.1	7.1	5.7	5.7
2021	7.1	7.3	5.7	4.9	6.3

Source: CSO.ie

It can be seen that the rate of unemployment has been consistently at a relatively low level in recent years, notwithstanding the temporary impacts of the Covid-19 pandemic. The level of unemployment recorded in Q3 / Q 4 of 2021 is particularly low and indicative of wider economic growth as the impacts of Covid-19 are reduced.

7.4.5.1. Means of Commuting to School, College or Work

The CSO was examined to determine the most popular means of commuting to school, college or work, as shown in Table 7.14. For those in employment or students at either school or college, the state average for commuting by car is 37.2%. The average is higher in Kildare (41.5%) and gradually decreases towards the city centre where 35.7% of commuters travel by car in South Dublin and 20.4% in Dublin City.

Dublin City has the highest average of commuters using public transport (14.2%), walking (16.4%) and cycling (6.2%). This is expected in the City Centre where there is a range of public transport services including Dublin Bus services, Bus Éireann services, Luas, DART and other rail services, and well-established pedestrian and cycling infrastructure.

Conversely, the ED of Donaghcumper in County Kildare is the furthest ED from Dublin City with 46.1% of commuters travelling by car and only 1.4% by bicycle.

This suggests that people who live in areas with a high standard of public transport, pedestrian, and cycle infrastructure will avail of these services as their means of commuting in comparison to those who do not live near sustainable transport infrastructure.

Table 7.14: Means of Commuting to School, College, or Work

Area	Car (%)	Bus, Minibus or Coach (%)	Train, DART or LUAS (%)	Foot (%)	Bicycle (%)
State	37.2	6.6	1.7	89.0	1.72
Kildare	41.5	6.5	2.7	9.4	1.08
South Dublin	35.7	9.3	1.7	10.3	2.5

Area	Car (%)	Bus, Minibus or Coach (%)	Train, DART or LUAS (%)	Foot (%)	Bicycle (%)
Dublin City	20.4	10.5	3.7	16.4	6.2
Electoral Divisions:					
Donaghcumper ED	46.1	10.2	2.8	4.4	1.4
Newcastle ED	44.0	4.7	1.9	5.8	1.0
Lucan – St. Helens	37.7	11.5	0.9	11.2	1.7
Lucan - Esker	43.6	13.0	0.3	10.2	2.5
Clondalkin – Cappaghmore	23.2	12.6	0.3	12.1	2.8
Clondalkin – Dunawley	51.8	16.2	0.1	17.3	3.0
Clondalkin – Rowlagh	23.5	9.8	0.2	14.3	1.7
Clondalkin – Moorfield	28.4	9.7	0.6	13.9	1.9
Clondalkin – Monastery	34.8	8.7	3.9	10.1	2.1
Cherry Orchard A	19.6	7.8	0.8	7.7	1.7
Cherry Orchard C	25.9	10.9	1.5	14.0	2.2
Carna	24.7	11.0	0.4	11.6	1.8
Drumfinn	21.6	10.0	0.3	15.1	1.9
Chapelizod	29.9	18.0	0.9	7.9	5.5
Decies	20.0	11.0	0.8	12.6	1.8
Inchicore A	20.1	9.6	8.9	11.2	6.9
Inchicore B	17.4	5.4	8.8	12.2	3.2
Kylemore	20.1	11.3	0.6	13.9	1.8
Kilmainham A	22.5	15.4	1.0	9.2	4.7
Kilmainham B	21.7	14.9	4.3	11.6	10.6
Kilmainham C	18.1	13.1	8.3	11.5	7.3
Phoenix Park	17.9	11.1	10.5	11.7	9.4
Ushers A	17.9	14.6	12.5	16.1	10.7
Ushers B	9.1	12.1	6.8	28.1	4.9
Ushers C	12.4	8.6	6.6	22.1	7.5
Ushers D	15.5	8.6	8.1	18.2	9.5
Ushers E	18.1	9.8	6.6	17.5	7.2
Ushers F	15.8	7.9	5.1	13.3	9.3
Arran Quay B	9.1	11.9	5.6	27.0	8.9
Arran Quay C	7.3	9.7	10.3	28.8	7.1
Arran Quay D	12.8	8.2	4.7	13.2	7.2
Arran Quay E	11.7	9.2	3.5	21.5	9.2

Area	Car (%)	Bus, Minibus or Coach (%)	Train, DART or LUAS (%)	Foot (%)	Bicycle (%)
Cabra West B	16.9	9.4	1.9	12.4	3.9
Cabra West C	22.7	12.9	1.2	15.6	6.2
Cabra West D	12.5	6.7	0.6	5.8	3.9
Cabra East A	45.6	23.0	1.7	22.9	13.9
Cabra East B	18.3	10.1	0.9	16.1	6.0
Cabra East C	19.8	20.6	3.1	19.1	11.1
Botanic A	20.2	14.5	0.8	12.6	6.8
Botanic B	36.3	18.7	4.7	28.6	13.9
Botanic C	9.4	8.3	1.8	10.9	5.6
Inns Quay A	6.9	10.1	1.3	17.3	6.3
Total (average %):	22.6	11.4	3.5	14.7	5.6

Source: CSO.ie

7.4.5.2. Tourism

The tourism industry grew steadily from 2012 to 2019. Data on overseas tourist numbers and spend in the period 2015 to 2019 is presented in Table 7.15.

Table 7.15: Tourists and Tourism Revenue

Tourism	2015	2016	2017	2018	2019
Tourist Numbers 000's	8,036	8,742	9,023	9,609	9,691
Total Tourism Revenue (€m)	7,688.8	8,337.6	8,838.3	8,838.3	-

Source: CSO / Fáilte Ireland / TSB NISRA / Central Bank of Ireland

It was estimated by the Irish Tourism Industry Confederation that in 2019, approximately 265,000 people in Ireland were employed in the tourism and hospitality sector. In 2019, Dublin welcomed 6.6m overseas tourists, 1.8m domestic trips generating €2.4bn in revenue and supporting 65,000 jobs. Tourism displays a very high dependency on public transport in particular for it's successful operation. International tourists visiting here expect a high-quality transport system. 75% of overseas holidaymakers visiting Dublin in 2018 were travelling to Ireland for the first time. Therefore, an efficient and reliable public transport system is a key requirement and enabler to creating a great tourist experience, particularly in Dublin where tourists tend to use public transport more than in other parts of the country.

Public Transport is required for access, within Dublin City and it's immediate environs, between accommodation, major transportation hubs [airport, port, train stations and regional bus termini] and the main tourism attractions – monuments, museums, amenities, hospitality, and entertainment venues. While many tourists use coaches and hired cars when travelling between regions, within the city region most tourists rely heavily on public transport.

In addition, there are a number of principle typical day trips within the DART network. Some of these include the coastal villages in the north and south of the county, Dublin / Wicklow Mountains (popular for outdoor activities including walking / hiking and cycling) and to large scale attractions. DART services are not only important for visitors themselves but of equal importance to those employed in the hospitality sectors, who are often critically dependent upon public transport, often at times at the very beginning and end of the working day.

There are a number of tourist attractions within the study area including, but not limited to, the following:

- Kilmainham Gaol;
- Irish Museum of Modern Art;
- Guinness Storehouse;
- Irish National War Memorial Gardens;
- National Museum of Ireland;
- Phoenix Park;
- Dublin Zoo; and
- National Botanic Gardens.

The ongoing Covid-19 pandemic is having profound impacts on tourism employment. The full impact of this is unclear at the time of writing (Q2, 2022), but tourism revenue and employment within Ireland and the Population Study Area has clearly been significantly reduced in 2020. There is no clear timeline for a return to 2012 – 2019 tourism levels. Fáilte Ireland research indicates that 77% of tourism businesses had fewer seasonal staff and 54% of tourism businesses had fewer permanent staff in the summer of 2020 compared to the summer of 2019 (Barometer Wave 2 – September 2020).

Notwithstanding the above, the improving air access to Ireland from Great Britain, Europe and North America is positive. Tourism Economics' Global Travel Service (GTS) forecasts that Europe will remain the strongest performing region in 2022.

Data from Google Destination Insights shows that international travel demand was back at 2019 levels for Spring 2022, led by significant increases in UK and US markets year on year. The UK accounts for 53% of international search demand for Ireland, and USA accounts for 20%. Overall inbound travel is estimated to reach 60-70% of 2019 levels in 2022 (Refer to Figure 7-10).

Figure 7-10 International Travel Demand (Air and Accommodation) from January to March (2020/2021/2022)

Source: Google Destination Insights

7.4.6. Evolution of the Environment in the Absence of the Project (Do Nothing)

Annex IV of the EIA Directive sets out the information required to be included in an EIAR. This includes:

> *"A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge."*

In the event that the proposed Project does not come forward, an assessment of the future baseline conditions has been carried out and is described within this section.

In the "do-nothing" scenario the interventions for the modernisation of the railway corridor and areas outside of CIÉ lands for the Project would not be undertaken and includes the continued use of the existing railway line.

Land Use Change and Settlement Patterns

The track will remain protected for future railway expansion under the current KDCP, SDCDP and the DCDP. In the absence of the Project, achievement of the National Planning Framework objectives for compact growth will be curtailed. The objective for compact growth is grounded in well integrated transport and land use planning. Without it, achievement of effective densities and consolidation of existing urban space cannot be achieved, and further urban sprawl would be anticipated in the absence of the Project.

People moving into surrounding settlements is likely to continue at the current rate, however as sustainable transport infrastructure to support these communities is not available, compact growth will be curtailed.

Journey Characteristics and Journey Amenity

In the absence of this project, journey characteristics and journey amenity will continue to be sub-optimal, with existing train services becoming more overcrowded as train capacity is limited to the current 12 trains per hour per direction and a current peak capacity of approximately 5,000 passengers per hour per direction. The anticipated population growth along the line as noted in the NPF, the EMRSES and the CDP of Kildare, South Dublin and Dublin City will aggravate this further and will have a negative impact on journey characteristics and journey amenity for both rail and road users.

Community Infrastructure (including Local Services and Amenity)

In the absence of the Project, existing train services will become more overcrowded, a situation that will be intensified by anticipated population growth. This will have a negative impact on the surrounding population's accessibility to existing local services and amenities in the area.

Economic Activity (including Tourism and Employment)

Dublin is heavily dependent on road and private car-based transport, resulting in roads accessing Dublin becoming heavily congested. In the absence of the project the opportunities for modal shift to more sustainable transport options will be curtailed and achievement of the full extent of the key public transport objectives of the Transport Strategy for the Greater Dublin Area 2016-2035 may be limited, albeit other aspects envisaged such as Metrolink and Bus Connects could still proceed.

In the absence of the project, commuter dependence on private car usage as the means to access Dublin City for work and to access services will continue, contributing to ongoing congestion on the road network accessing Dublin City. The ongoing congestion will in turn impact negatively on economic growth through journey delays, reduced environmental quality etc. The existing train services will become more overcrowded, aggravated by population growth, discouraging modal shift from private car to more sustainable transport options. This is likely to have a negative impact in terms of inward investment in the area.

Tourism activities and services in particular rely on public transport for access to and transport between venues and destinations. In the absence of the project there will be a reduced offering of integrated transport available. The existing train services will continue to be overcrowded, aggravated by population growth and impacting on tourist experience in terms of accessibility to tourist destinations and tourist-related services (e.g. hotels, B&Bs, etc.) both within Dublin City and the wider catchment.

Furthermore, in the absence of the project, opportunities for improved inter-rail and inter-modal connectivity and integration with other public transport services would be constrained along the catchment area for the rail network, reducing accessibility to jobs, education, and other social and economic opportunities from inward investment.

In the absence of the project, employment opportunities and economic benefit for local businesses and communities generated through the construction phase will not arise.

7.5. Description of Potential Impacts

To avoid repetition, a summary of the potential significant impacts that are common to the entire study area are described in the first instance, with impacts that are unique to each of the four main geographic areas (as outlined in Chapter 4 Project Description) set out thereafter.

7.5.1. Potential Construction Impacts

The key relevant characteristics of the construction phase that affect the population is the nature of the works, location, phasing, and duration of the construction works and associated effects. The project is a predominantly linear project taking place with the existing CIÉ boundary with localised construction works taking place outside of the boundary at various locations, therefore many of the effects will be transient and dispersed during the construction period. For more detail refer to Chapter 5 Construction Strategy of this EIAR.

7.5.1.1. Construction Impacts Common to Entire Study Area

Land Use Change and Settlement Patterns

The proposed Project is located on lands with zoning objectives that allow for the proposed works to be undertaken (refer to Chapter 2 Policy Context and Need for the Project). To facilitate certain works such as bridge replacement / upgrade, temporary construction compounds will be located on lands adjacent to the railway corridor. Impacts on land use change and settlement patterns during the construction phase will be negative, direct, slight and temporary to short-term.

Journey Characteristics and Journey Amenity

Construction activities will include an increase in movement of HGV traffic, traffic diversions, increased dust, noise and vibration emissions, and will result in negative, direct and indirect, slight, and temporary

to short-term impacts to journey characteristics and journey amenities for all road users close to construction sites and compounds.

Works within the permanent way including track lowering and OHLE installation will have limited impacts on journey characteristics of vehicular and non-vehicular road users. The majority of works will be carried out during night-time, outside of the operational times. Exceptions to this are possible where work sites can be segregated from live railway or disruptive possession or closure is needed, in which case works will be daytime, including weekends.

Some construction works will impact rail services due to the requirement for works to take place on or over the railway and for safety reasons will require full or partial closure of the railway which will result in disruption or temporary suspension of rail services. For example, the complexity of the works required within the Phoenix Park Tunnel (PPT), will require the Phoenix Park Tunnel Branch Line and the PPT to be closed for a period of 6 months to ensure safe working conditions can be maintained. The potential effect of journey characteristics and journey amenity to road and rail users is a negative, direct and indirect, slight to moderate, temporary impact.

Works to bridges will likely impact on journey characteristics and journey amenity of road users. There will be some restrictions in place along footpaths and roads at these structures to facilitate the works and in some cases, temporary detours will be in place. The potential effect on journey characteristics and journey amenity for road users including pedestrians is negative, direct and indirect, slight and temporary.

Community Infrastructure (including Local Services and Amenity)

The majority of haulage routes for construction compounds consist of construction traffic being routed through existing urban and / or rural areas which include residential, community, educational, medical, commercial, accommodation (hotels and B&Bs). Access to community infrastructure and amenities will be maintained as far as practicable during these short-term construction periods, however, there is potential for impacts to occur due to increase in traffic, daytime and night-time construction works. The potential effect on these areas from construction traffic is negative, indirect, slight to moderate, temporary to short-term effects. Construction compounds may have a negative, indirect, slight to moderate, temporary to short-term effects on these areas depending on the nature and duration of construction activities within and / or near the sites.

Economic Activity (including Tourism and Employment)

The proposed Project will create direct skilled and unskilled jobs to support the project at various stages during the construction phase. It is likely that employment opportunities will not only be local to the project but may also extend to the wider regional area depending on the skills required. The proposed Project is likely to have a positive, direct, and indirect, moderate to significant, short-term effect on employment.

The construction phase will necessitate the purchasing of large quantities of materials of varying types requiring the services of a range of economic operators. It is likely that the proposed Project will have a positive, indirect, moderate, and short-term effect on the economy.

Access will be maintained to all business premises as far as practicable during the construction phase. However, traffic diversions / disruptions and nuisance from construction activities may impact on general amenity and journey characteristics changing transport routes and passing trade in both a positive and / or negative way across certain areas. Furthermore, extended construction activities resulting in nuisance, noise particularly during night-time works and general disruptions may have a direct and indirect economic impact on sensitive sites such as hotels, B&Bs and other commercial properties in vicinity of the construction works. There is potential for negative, direct and indirect, slight, temporary to short-term impacts. Local expenditure, hospitality and retail sales are also likely to increase due to expenditure from construction workers at these sites which is likely to be positive, direct and indirect, slight to moderate short-term effects to the local economy.

7.5.1.2. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Land Use Change and Settlement Patterns

A total of four substations are proposed in Zone A at Hazelhatch, Adamstown, Kishoge and Park West.

Three disused buildings require demolition to facilitate the construction of the new Hazelhatch substation and temporary construction compound. The three buildings are derelict dwellings adjacent to the car park at Hazelhatch station, on lands within the ownership of CIÉ. A temporary construction compound is also proposed to facilitate the construction of the new substation. A temporary construction compound is also proposed to the west of Hazelhatch station, on brownfield lands within an existing maintenance compound within the ownership of CIÉ.

The location of the proposed Adamstown substation is within a greenfield site on lands within the ownership of CIÉ.

The proposed Kishoge substation is located on lands within the control of South Dublin County Council to the northwest of Kishoge Station, on the northern boundary of the railway corridor. This site is located to the west of the proposed Kishoge Urban Centre within the Clonburris Strategic Development Zone.

The proposed Park West substation is located on a brownfield site within the ownership of Dublin City Council. These lands are identified within the Dublin City Development Plan as a Strategic Development Regeneration Area (SDRA 4) with a land use zoning "*to seek the social, economic and physical development and / or rejuvenation of an area with mixed use, of which residential and Z6 (employment/enterprise uses) would be the prominent uses*". A proposed construction compound is also located on these lands.

Impacts on land use change and settlement patterns will be negative, direct, slight, and permanent.

Journey Characteristics and Journey Amenity

There are no major traffic diversions anticipated in this section of the project. Where parapet enhancement works are proposed, these will be under temporary lane occupation (reductions or closures). Proposed traffic diversions and impacts due to the movement of construction vehicles will have a negative, direct and indirect, moderate and temporary to short-term effect on journey characteristics and journey amenity.

Community Infrastructure (including Local Services and Amenity)

Construction works and truck movements in Zone A will likely have a negative, moderate, short-term impact on general amenity due to increased congestion, associated noise and dust (see also Chapter

12 Air Quality and Chapter 14 Noise & Vibration). The impact on education facilities, childcare facilities and the Adamstown Community Centre, which along with other educational facilities is located near the proposed infrastructure will be negative, indirect, moderate and temporary to short-term. The impact on recreational facilities, healthcare facilities, emergency services and places of worship will be negative to neutral, indirect, slight and temporary to short-term.

Economic Activity (including Tourism and Employment)

The proposed Project will create direct skilled and unskilled jobs to support the project at various stages during the construction phase. It is likely that employment opportunities will extend across local and regional / national scale depending on the skills required. In this regard, specific projections in relation to Zone A cannot be made.

The construction phase is not likely to have significant impacts on the operation of tourist facilities or attractions in Zone A, or the numbers of tourists visiting the area. However, proposed impacts due to the movement of construction vehicles will have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone A.

7.5.1.3. Zone B - Park West & Cherry Orchard Station to Heuston Station

Land Use Change and Settlement Patterns

Between Park West Station and Heuston Station the railway corridor has to be widened to accommodate the additional two tracks for the new DART+ service. To achieve the widened cross section, to limit the impact of the construction works on adjacent properties and to reduce land acquisition, it is proposed to construct retaining walls along each side of the corridor where there is a level difference between the tracks and the adjacent land. Potential impacts on adjoining properties are considered in Chapter 16 Material Assets: Agriculture and Chapter 17 Material Assets: Non-Agricultural Properties.

Other works include replacement / upgrade of existing bridges, modifications to roads, modifications to walls and other structures, demolition of structures, utility diversions and provision of a substation at a brownfield site within CIÉ lands at Inchicore Depot.

The construction of the proposed substation will have a negative, direct, slight, permanent in terms of land use change and settlement patterns.

To facilitate works, temporary construction compounds will be required in Zone B, as set out in Table 7.16.

Table 7.16: Construction Compounds and Land Use Change in Zone B

Area of Works	Compound Location	Land Use	Zoning Objective	Potential Effect
Park West and Le Fanu Road Bridge (OBC7)	Friel Avenue	The site is privately owned commercial property, currently greenfield, and will need to be temporarily acquired for the duration of the works.	Located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.

Area of Works	Compound Location	Land Use	Zoning Objective	Potential Effect
	Cherry Orchard Avenue	The site is currently a greenfield area with direct access to the rail corridor and will need to be temporarily acquired for the duration of the works.	Located within DCDP lands zoned as Z1: Sustainable Residential neighbourhoods which aims *"to protect, provide and improve residential amenities".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Le Fanu Road Bridge	These four sites are located at the four corners of Le Fanu Road Bridge.	Located within DCDP lands zoned as Z9: Amenity/Open Space Lands/Green Network which aims *"to preserve, provide and improve recreational amenity and open space and green networks"* and Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compounds will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Le Fanu Road South (Main Contractor Offices and Friel Avenue Compound)	The site is located south of a working truck parking site.	Located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
Between Le Fanu Road Bridge (OBC7) and Kylemore Road Bridge (OBC5A)	Kylemore Bridge North East	Open space and will need to be temporarily acquired for the duration of the works	Located within DCDP lands zoned as Z1: Sustainable Residential neighbourhoods which aims *"to protect, provide and improve residential amenities".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Kylemore Bridge South West	The site is currently an existing car park belonging to adjacent commercial units and will need to be temporarily acquired for the duration of the works	Located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, moderate and temporary*.
	Kylemore Bridge South East	The site is currently an existing car park belonging to adjacent	Located within DCDP lands zoned as Z6: Employment/Enterprise	The compound will only be in place for the duration of the construction works. The

Area of Works	Compound Location	Land Use	Zoning Objective	Potential Effect
		commercial units and will need to be temporarily acquired for the duration of the works	Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	potential effect on land use is *direct, negative, moderate and temporary*.
Between Kylemore Road Bridge (OBC5A) and Sarsfield Road Underbridge (UBC4)	Inchicore	It is CIÉ owned land (within Inchicore Depot)	Located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Khyber Pass Footbridge North	Private property/ green space	Located within DCDP lands zoned as Z1: Sustainable Residential neighbourhoods which aims *"to protect, provide and improve residential amenities".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Khyber Pass Footbridge South	Green space on CIÉ property (within Inchicore Depot)	Located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims *"to provide for the creation and protection of enterprise and facilitate opportunities for employment creation".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
Between Sarsfield Road Underbridge (UBC4) and Memorial Road Bridge (OBC3)	Sarsfield Road North East	Green space	Located within DCDP lands zoned as Z9: Amenity/Open Space Lands/Green Network which aims *"to preserve, provide and improve recreational amenity and open space and green networks".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Sarsfield Road South West	An existing flat grassed area on CIÉ property	Located within DCDP lands zoned as Z1: Sustainable Residential neighbourhoods which aims *"to protect, provide and improve residential amenities".*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
	Sarsfield Road South East	The site is a privately owned commercial property operating as Dan Ryan Truck	Located within DCDP lands zoned as Z1: Sustainable Residential	The compound will only be in place for the duration of the construction works. The potential effect on land use

Area of Works	Compound Location	Land Use	Zoning Objective	Potential Effect
		Rental. The site is the main access point for the construction of the southern retaining walls between Sarsfield Road and Memorial Road.	neighbourhoods which aims *"to protect, provide and improve residential amenities".*	is *direct, negative, moderate and temporary*.
Between Memorial Road Bridge (OBC3) and South Circular Road Junction	Memorial Road Bridge	The Memorial Road Bridge currently connects Inchicore Road and Chapelizod Bypass.	There is no zoning objective on the site. The lands to the east and west of the proposed compound are Zone Z6.	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, moderate and temporary*.
	Con Colbert Road	The site contains the first lane (bus lane) of Con Colbert Road. The first lane from the South Circular Road Junction to beyond Memorial Road will need to be closed.	There is no zoning objective on the site. The lands in closest proximity to the site include Zone Z6, Zone Z1, and Zone Z9.	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, moderate and temporary*.

Impacts on land use change and settlement patterns in relation to the construction compounds will be negative, moderate, temporary to short-term.

There are a number of building demolitions required in Zone B. These are detailed in Chapter 5 Construction Strategy. Demolitions include buildings and walls on lands generally located within DCDP lands zoned as Z6: Employment/Enterprise Zones which aims "*to provide for the creation and protection of enterprise and facilitate opportunities for employment creation*". The potential effect of these demolitions on land use is negative, direct, slight and permanent.

The land use change associated with the demolition of structures in Zone B is likely to have a negative, direct, slight, and permanent effects on land use characteristics and settlement patterns during the construction phase.

Journey Characteristics and Journey Amenity

Temporary traffic management measures, including road closures and diversions, will be in place to facilitate works. The number of full road closures will be limited, and duration will also be limited to a few days or half days at a time, over a period of 6 months (approx.). Vehicular and non-vehicular diversions will be in place during the works to maintain access throughout. vehicular users are anticipated to experience initial congestion at the start of road closures, followed by a gradual decrease in total vehicle volumes and congestion, owing to the duration of closures. Existing public bus services will be impacted as a result of diversions, with a need to temporarily relocate bus stops to serve revised routes. Proposed traffic diversions and impacts due to the movement of construction vehicles will have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone B.

While there will be temporary severance at certain locations within Zone B during the proposed works, overall pedestrian and cycling connectivity will be maintained throughout the closure period through diversions. Proposed traffic diversions and impacts due to the movement of construction vehicles will

have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone B.

Construction activities will include an increase in movement of HGV traffic, traffic diversions, increased dust, noise and vibration emissions, and will result in negative, slight, direct and indirect, temporary to short-term impacts to journey characteristics and journey amenities for all road users close to construction sites and compounds.

Works within the railway corridor including track lowering and OHLE installation will have limited impacts on journey characteristics of vehicular and non-vehicular road users. The majority of works will be carried out during day-time hours. Exceptions to this are possible where work will impact on live railway operations, disruptive possessions or closures will be required, in which case works will need to carried out during night-time or weekends.

Community Infrastructure (including Local Services and Amenity)

The majority of haulage routes for construction compounds consist of construction traffic being routed through existing urban areas which include residential, community, educational, medical, commercial and accommodation (hotels and B&Bs). Access to community infrastructure including education facilities, childcare facilities and amenities will be maintained as far as practicable during these short-term construction periods however, there is potential for impacts to occur due to increase in traffic, day-time and night-time construction works.

Temporary traffic management measures including road closures and diversions will be in place to facilitate works. Diversions will have a negative, indirect, slight to moderate, short-term impact on access to community infrastructure including local services and amenities.

Construction works and truck movements in Zone B will likely have a negative, direct and indirect, moderate, short-term impact on general amenity due to increased congestion, associated noise and dust (see also Chapter 12 Air Quality and Chapter 14 Noise & Vibration).

Economic Activity (including Tourism and Employment)

The proposed Project will create direct skilled and unskilled jobs to support the project at various stages during the construction phase. It is likely that employment opportunities will extend across local and regional / national scale depending on the skills required. In this regard, specific projections in relation to Zone B cannot be made.

The construction phase is not likely to have significant impacts on the operation of tourist facilities or attraction in Zone A, or the numbers of tourists visiting the area. However, proposed traffic diversions and impacts due to the movement of construction vehicles will have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone B. There will also be negative, indirect, moderate and temporary to short-term impacts on local businesses due to the location of construction compounds in the area.

7.5.1.4. Zone C – Heuston Yard & Station (incorporating New Heuston West Station)

Land Use Change and Settlement Patterns

The main works at Zone C comprise the provision of a new station at Heuston West, including a bridge with both stairs and ramps above the tracks, adjacent to the Clancy Quay development, the electrification of the existing twin track and the electrification of 3 no. platforms and 4 no. sidings in

existing Heuston Station and corresponding track realignment at Islandbridge Junction to deliver capacity increase. A substation and attenuation tank are also to be provided in this area, on brownfield lands within the ownership of CIÉ. Works also include minor modifications to roads and utility diversions as described in Chapter 4 Project Description and Chapter 5 Construction Strategy.

Three construction compounds are required to the west of Heuston Station for works to be undertaken to the Phoenix Park Tunnel and the construction of the new Heuston West Station and works at Heuston Yard. The proposed compounds are located on CIÉ property adjacent to the existing Platform 10 and the Clancy Quay residential development. Compounds will be on both sides of the existing railway.

The land use for the western portion of this area is zoned Z10, with an objective that seeks "*to consolidate and facilitate the development of inner city and inner suburban sites for mixed-uses, with residential the predominant use in suburban locations, and office / retail / residential the predominant uses in inner city areas*". The eastern portion of this area is zoned Z5, with an objective that seeks "*to consolidate and facilitate the development of the central area and to identify, reinforce, strengthen and protect its civic design character and dignity*". The area is also identified as a Strategic Development Regeneration Area (SDRA 7) for which a masterplan has been prepared.

Impacts on land use change and settlement patterns during the construction phase in Zone C will be negative, direct and indirect, slight, temporary to short-term.

Journey Characteristics and Journey Amenity

It is proposed that the construction works at Heuston West will be undertaken during a wider shutdown of the Phoenix Park Tunnel Branch Line and PPT (approximately 6 months) to facilitate the necessary works on the PPT and the other bridges along the Phoenix Park Tunnel Branch Line. The station works will be coordinated with the alterations to the track layout and the attenuation tank which are to be installed in the area. Works at the existing Heuston Station will require separate partial closures of sections of the existing Heuston station (carriage sidings 3 to 6 in the northern yard area and platforms 6, 7 and 8).

Localised temporary traffic management is required to deliver the Heuston West Station. Construction activities will include an increase in movement of HGV traffic, increased dust, noise and vibration emissions, and will result in negative, direct and indirect, slight, temporary to short-term impacts to journey characteristics and journey amenities for all road users close to construction sites and the construction compound.

Community Infrastructure (including Local Services and Amenity)

Construction works and truck movements in Zone C will likely have a negative, direct and indirect, moderate, short-term impact on general amenity due to increased congestion, associated noise and dust (see also Chapter 12 Air Quality and Chapter 14 Noise & Vibration).

Economic Activity (including Tourism and Employment)

The proposed Project will create direct skilled and unskilled jobs to support the project at various stages during the construction phase. It is likely that employment opportunities will extend across local and regional / national scale depending on the skills required. In this regard, specific projections in relation to Zone C cannot be made.

The construction phase is not likely to have significant impacts on the operation of tourist facilities or attraction in Zone C, or the numbers of tourists visiting the area. However, proposed traffic diversions, impacts due to the movement of construction vehicles, partial station closures / curtailment and service interruptions will have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone C.

7.5.1.5. Zone D - Liffey Bridge to Glasnevin Junction

Land Use Change and Settlement Patterns

Between Liffey Bridge (UBO1) and Glasnevin Junction the main works include the electrification of the existing twin track, modification to the PPT, modifications to 9 of the 10 existing bridges (including track lowering and modification to existing parapets, with a deck replacement at Glasnevin Cemetery Road Bridge (OBO10), modifications to walls and other structures, and utility diversions.

To facilitate works, temporary construction compounds will be required in Zone D, as set out in Table 7.17.

Table 7.17: Construction Compounds and Land Use Change in Zone D

Substation Location	Land Use	Zoning Objective	Potential Effect
Cabra	The area is currently located on CIÉ lands and is used for track maintenance.	Located within Dublin City DP 2016 – 2022 lands zoned as Z3: Neighbourhood centres which aims *"to provide for and improve neighbourhood facilities"*	The compound will only be in place for the duration of the construction works. The potential effect on land use is *direct, negative, slight and temporary*.
Glasnevin Cemetery	The area of land occupied by the construction compound is currently used for car parking for the Glasnevin Cemetery	Located within Dublin City DP 2016 – 2022 lands zoned as Z9: Amenity/Open Space Lands/Green Network which aims *"to preserve, provide and improve recreational amenity and open space and green networks"*	The compound will only be in place for the duration of the construction works. The temporary loss of car parking spaces is noted and the potential effect on land use is *direct, negative, slight and temporary*.

Impacts on land use change and settlement patterns in relation to the construction compounds will be negative, slight, temporary to short-term.

Journey Characteristics and Journey Amenity

Proposed construction works will necessitate a shutdown of the Phoenix Park Tunnel Branch Line and PPT (approximately 6 months) to facilitate the necessary works on the PPT and the other bridges along the Phoenix Park Tunnel Branch Line. The Phoenix Park Tunnel Branch Line and PPT is an active route with freight and passenger trains regularly running through the tunnel. Closures of the Phoenix Park Tunnel Branch Line and PPT will have a negative, direct and indirect, moderate and temporary to short-term effect on journey characteristics and journey amenity for rail users.

The proposed works at Glasnevin Cemetery Road Bridge (OBO10) will take place over a 4-month period (approx.). During this period, a temporary closure of the bridge will be required with vehicular

access to the cemetery suspended for a 3-week period (approx.). A temporary pedestrian and wheelchair accessible bridge will be installed to the southeast of the existing structure. These works, in combination with modifications to roads in the vicinity of Glasnevin Cemetery Car Park, will have a negative, direct and indirect, moderate and temporary to short-term effect on journey characteristics and journey amenity for road users including pedestrians and cyclists.

Community Infrastructure (including Local Services and Amenity)

The temporary loss of car parking spaces at Glasnevin Cemetery Car Park, construction works and truck movements in Zone D will likely have a negative, direct and indirect, moderate, short-term impact on general amenity due to increased congestion, associated noise and dust (see also Chapter 12 Air Quality and Chapter 14 Noise & Vibration).

Economic Activity (including Tourism and Employment)

The proposed Project will create direct skilled and unskilled jobs to support the project at various stages during the construction phase. It is likely that employment opportunities will extend across local and regional/national scale depending on the skills required. In this regard, specific projections in relation to Zone D cannot be made.

The construction phase is not likely to have significant impacts on the operation of tourist facilities or attractions in Zone D, or the numbers of tourists visiting the area. However, proposed traffic diversions, impacts due to the movement of construction vehicles, partial closure of the railway / curtailment and service interruptions will have a negative, indirect, moderate and temporary to short-term effect on the tourist experience in Zone D.

7.5.2. Potential Operational Impacts

7.5.2.1. Operational Impacts Common to Entire Study Area

- Positive, direct, significant, long-term impacts on rail passenger travel due to the increased frequency in train services, reduced journey times, improved accessibility to employment, promotion of sustainable travel patterns and future development opportunities across the study area and beyond.
- Positive, direct and indirect, moderate, long-term impacts on the overall economic activity of the region by providing enhanced reliable transport network having a positive impact on economic activity.
- Positive, indirect, slight to moderate, long-term effect on the tourism sector and recreational resources within Dublin and the wider region as a result of the improved reliability of the public transport train service.
- Positive, direct, moderate, long-term effect on the societal response required to combat unsustainable transport and travel patterns by providing a more sustainable, cleaner and reliable public transport train service.
- Positive, indirect, moderate, long-term effect on the population due to the long-term investment in sustainable travel and infrastructure influencing land use patterns, journey characteristics and journey amenities, and access to community infrastructure including open spaces.

- Positive, direct and indirect, moderate to significant, long-term effect on other roads users notably cyclists and pedestrians from improved surface road conditions at junctions and from improved cyclist and pedestrian infrastructure. This will also benefit motor vehicles through improved road junctions and conditions, particularly at locations such as Le Fanu Road Bridge (OBC7).

Land Use Change and Settlement Patterns

The DART+ Programme supports, and is consistent with, the national level planning and transport policies including the National Planning Framework, Transport Strategy for the Greater Dublin Area 2015-2035, the respective county development plans (Dublin City, South Dublin and Kildare) all of which are addressed in greater detail in Chapter 2 of this EIAR. Local land use changes within each Zone are described in sections below.

DART+ Programme is identified as 'Action 246' in the Climate Action Plan 2021 which states '*Commence delivery of DART+ Programme and continue heavy rail fleet investment*' which will complement the other measures / actions and integrate positively with other major public infrastructure projects in the GDA such as Bus Connects, GDA Cycle Strategy etc. and will support the achievement of reducing emissions from transport and support the modal shift from private car to public transport and / or sustainable modes

The DART+ South West Project will support growing communities, businesses, and future development by providing high-quality integrated public transport services in line with Government policy including the National Planning Framework and Climate Action Plan.

Journey Characteristics and Journey Amenity

The proposed Project will have positive, significant, long-term impacts on rail passenger travel due to the increased frequency in train services, reduced journey times and improved accessibility to employment and services.

The DART+ South West Project will significantly increase rail capacity and frequency from the current 12 trains per hour per direction to 23 trains per hour per direction (i.e. maintain the existing 12 services, with an additional 11 train services provided by DART+ South West). This will increase passenger capacity from the current peak capacity of approximately 5,000 passengers per hour per direction to approximately 20,000 passengers per hour per direction. It will transport passengers in high quality trains that are designed to best suit the needs of growing communities, providing additional passenger capacity, and crucially during peak AM and PM commuter periods.

The proposed Project will also lead to reduced carbon emissions through the deployment of new electric trains for the shorter commuter journeys (see also Chapter 12 Air Quality and Chapter 13 Climate for further analysis).

The proposed Project will also improve multimodal transport connectivity through the provision of a new station at Heuston West (with onward links to the Luas Red Line at Heuston Station), connection to the future DART+ West and Metrolink projects at Glasnevin creating a linked and well-connected public transport system for the Greater Dublin Area.

Community Infrastructure (including Local Services and Amenity)

The proposed modernised electrified rail fleet and capacity enhancements will provide greater access and improve access by rail to existing community infrastructure including educational, community, medical, etc, by increasing the frequency of commuter services at train stations between Hazelhatch & Celbridge Station and Dublin's city centre and increasing train capacity from the current 12 trains per hour per direction to 23 trains per hour per direction. Commuters will be afforded with more options with choosing their time of departure to reach local services and amenity areas, having a positive, indirect, moderate, long-term effect on general amenity areas.

Economic Activity (including Tourism and Employment)

The proposed Project will have positive economic impacts primarily in relation to relieving aggregated congestion within the Greater Dublin Area (GDA). In 2017, The Department of Transport published the report on '*The Costs of Congestion an Analysis of the Greater Dublin Area'* which identified that aggravated congestion leads to an array of costs for the economy primarily in relation to lost time to road users, emissions from vehicles idling, vehicle operating costs and wider economic impacts. According to the report, congestion can also increase the costs of doing business while also reducing the attractiveness of an area to locate a business in. The 2017 report measured the value of time lost to road users as a result of aggregated congestion within the GDA by mode of travel and the location. The report revealed that the economic costs incurred by aggregated congestions are the greatest for private car users at 59% of all road users, and that the areas associated with the majority of these costs is "*between the M50 and the canals, on key arterial routes*".

The proposed Project will have a positive impact on local economy and the GDA by relieving aggregated congestion and improving journey time reliability for both work, and non-work-related travel. Furthermore, the proposed rail service improvements may indirectly facilitate more sustainable and compact growth of existing and new communities by making areas in vicinity of the rail transport links more attractive to live in.

In relation to tourism, the increased frequency of train services will improve connections to tourist destinations and will have a positive effect on both, the tourism economic operators and the rail transport.

Overall, the proposed Project will have positive, direct and indirect, moderate, long-term effects on the economy.

7.5.2.2. Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

Land Use Change and Settlement Patterns

The proposed Project within Zone A will cater for an increase in the frequency of train services at the existing stations at Hazelhatch & Celbridge Station, Adamstown Station, Kishoge Station (not currently in use), Clondalkin / Fonthill Station and Park West & Cherry Orchard Station, having a positive, indirect, significant, long-term effect on land use by supporting the future population trends in the area and meeting the population demand for rail transport.

The proposed rail service improvements may indirectly facilitate more sustainable and compact growth of existing and new communities (such as those at Adamstown and Clonburris), by making areas in vicinity of the rail transport links more attractive to live in.

Hazelhatch Substation will be located on lands zoned as residential and will change the use of the site for transport and utilities. The substation will have a significant impact on the land use and its land use designation.

Adamstown Substation will be located on lands within the ownership of CIÉ, zoned RU: Rural, with an objective seeking "*to protect and improve rural amenity and to provide for the development of agriculture*". Due to the discrete location of the substation and its relatively small size when compared to the total area of the parcel of land in which it is located, it will not have a significant impact on the land use itself or its land use designation.

Kishoge Substation will be located on lands within the Clonburris Strategic Development Zone Planning Scheme. Under the Planning Scheme, the substation site is zoned for 'Mixed Use – Retail Community & Residential'. Due to the discrete location of the substation and its relatively small size when compared to the total area it will not have a significant impact on the land use itself or its land use designation.

Park West Substation will be located on lands identified within the Dublin City Development Plan as Strategic Development Regeneration Area (SDRA 4) and are zoned Z14: "*to seek the social, economic and physical development and/or rejuvenation of an area with mixed use, of which residential and Z6 (employment/enterprise uses) would be the prominent uses*". Due to the discrete location of the substation and its relatively small size when compared to the total area of SDRA 4, it will not have a significant impact on the land use itself or its land use designation.

Journey Characteristics and Journey Amenity

The proposed Project will have positive, significant, long-term impacts on rail passenger travel due to the increased frequency in train services serving Hazelhatch & Celbridge Station, Adamstown Station, Kishoge Station (not currently in use), Clondalkin / Fonthill Station and Park West & Cherry Orchard Station. The Project will also result in reduced journey times and improved accessibility to employment and services (see also Chapter 6 Traffic and Transport).

Community Infrastructure (including Local Services and Amenity)

For Zone A, the existing resident, visitor and working populations in Celbridge and Adamstown, and the future population at Clonburris, will benefit from the improved rail services and access to community infrastructure that the proposed Project will facilitate. Existing and future commuters will also be afforded with more options with choosing their time of departure to reach local services and amenity areas, having a positive, indirect and long-term effect on general amenity areas.

Economic Activity (including Tourism and Employment)

The proposed Project will cater for significant improvements to rail services between Hazelhatch & Celbridge Station and Dublin's city centre – enabling enhanced access to areas of employment and tourist facilities. Populations in proximity to existing stations at Hazelhatch & Celbridge Station, Adamstown Station, Kishoge Station (not currently in use), Clondalkin / Fonthill Station and Park West & Cherry Orchard Station will benefit from an improved sustainable transport service with a positive, indirect, significant and long-term effect on economic activity, including tourism and employment.

7.5.2.3. Zone B - Park West & Cherry Orchard Station to Heuston Station

Land Use Change and Settlement Patterns

The proposed Project within Zone C will cater for an increase in the frequency of train services at the existing station at Park West & Cherry Orchard Station and the proposed Heuston West Station, having a positive, indirect, significant, long-term effect on land use by supporting the future population trends in the area and meeting the population demand for rail transport through more frequent services connecting the Park West & Cherry Orchard Station to the city centre.

The proposed Project also ensures that potential future stations in the area (e.g. Kylemore) will be able to avail of the improved services that are being catered for as part of the DART+ South West Project. However, in the short to medium term, communities along this section will not experience the full benefits of the improvements in the absence of those future stations.

The proposed rail service improvements may indirectly facilitate more sustainable and compact growth of existing and new communities, by making areas in vicinity of the rail transport links more attractive to live in.

Journey Characteristics and Journey Amenity

The proposed Project will have positive, direct and indirect, significant, long-term impacts on rail passenger travel due to the increased frequency in train services serving Park West & Cherry Orchard Station and the proposed Heuston West Station. The Project will also result in reduced journey times and improved accessibility to employment and services. The proposed Project also ensures that potential future stations in the area will be able to avail of the improved services that are being catered for as part of the DART+ South West Project.

Community Infrastructure (including Local Services and Amenity)

The proposed Project will cater for improved access by rail to existing community infrastructure including educational, community, medical, etc, by increasing the frequency of commuter services at train stations between Hazelhatch & Celbridge Station and Dublin's city centre. For Zone B, the existing resident, visitor and working populations in the west of Dublin's city centre, including future populations at Park West, will benefit from the improved rail services and access to community infrastructure that the proposed Project will facilitate. Existing and future commuters will also be afforded with more options with choosing their time of departure to reach local services and amenity areas, having an indirect, positive and long-term effect on general amenity areas.

The proposed Project also ensures that potential future stations in the area will be able to avail of the improved services that are being catered for as part of the DART+ South West Project, having a positive, indirect and long-term effect on community infrastructure, local services and amenity.

Economic Activity (including Tourism and Employment)

The proposed Project will cater for significant improvements to rail services between Hazelhatch & Celbridge Station and Dublin's city centre – enabling enhanced access to areas of employment and tourist facilities. Populations in proximity to the existing station at Park West & Cherry Orchard and the proposed Heuston West Station will benefit from an improved sustainable transport service with a positive, indirect and long-term effect on economic activity, including tourism and employment.

The proposed Project also ensures that potential future stations in the area will be able to avail of the improved services that are being catered for as part of the DART+ South West Project, having a positive, indirect and long-term effect on economic activity, tourism and employment

7.5.2.4. Zone C – Heuston Yard & Station (incorporating New Heuston West Station)

Land Use Change and Settlement Patterns

The proposed Project within Zone C will include the provision of a new station at Heuston West and will cater for an increase in the frequency of train services in the area, having a positive, significant, long-term effect on land use by supporting the future population trends and meeting the population demand for rail transport. Of particular relevance is the positive impact on the future development of the Strategic Development Regeneration Area (SDRA) at Heuston. In this regard, the proposed new station at Heuston West and rail service improvements may indirectly facilitate more sustainable and compact growth of new communities by making the area more attractive to live in.

Journey Characteristics and Journey Amenity

The proposed Project will have positive, significant, long-term impacts on rail passenger travel due to the provision of a new station at Heuston West and increased frequency in train services serving the city centre and the Heuston SDRA. The development will result in reduced journey times and improved accessibility to employment and services.

The proposed pedestrian / cycle connection to Islandbridge via the Clancy Quay development, the proposed segregated pedestrian / cycle bridge to access the proposed new platforms and the main Heuston Terminal Station will improve permeability and accessibility – having a positive, direct and indirect, significant, long-term impacts on journey characteristics and journey amenity.

Community Infrastructure (including Local Services and Amenity)

The proposed Project will cater for improved access by rail to existing and future community infrastructure including educational, community, medical, etc, through the provision of a new station at Heuston West and by catering for an increase in the frequency of commuter services at train stations between Hazelhatch & Celbridge Station and Dublin's city centre. For Zone C, the existing and future resident, visitor and working populations in Dublin's city centre (particularly the future population of the Heuston Strategic Development Regeneration Area (SDRA), will benefit from the improved rail services and access to community infrastructure that the proposed Project will facilitate. Existing and future commuters will also be afforded with more options with choosing their time of departure to reach local services and amenity areas, having a positive, indirect and long-term effect on general amenity areas.

Economic Activity (including Tourism and Employment)

The proposed Project will cater for significant improvements to rail services between Hazelhatch & Celbridge Station and Dublin's city centre – enabling enhanced access to areas of employment and tourist facilities. Populations in proximity to the proposed new station at Heuston West, including future populations in the Strategic Development Regeneration Area (SDRA) at Heuston will benefit from an improved sustainable transport service with a positive, indirect and long-term effect on economic activity, including tourism and employment.

7.5.2.5. Zone D - Liffey Bridge to Glasnevin Junction

Land Use Change and Settlement Patterns

The proposed Project within Zone D will cater for an increase in the frequency of train services on the network, having a positive, indirect, significant, long-term effect on land use by supporting the future population trends in the area and meeting the population demand for rail transport. The proposed Project will also improve multimodal transport connectivity through connection to the wider DART+ network and Metrolink project at Glasnevin creating a linked and well-connected public transport system for the Greater Dublin Area.

The proposed rail service improvements will indirectly facilitate more sustainable and compact growth of existing and new communities, by making areas in the vicinity of the rail transport links more attractive to live in.

Journey Characteristics and Journey Amenity

The proposed Project will have positive, direct and indirect, significant, long-term impacts on rail passenger travel due to the increased frequency in train services serving the city centre and onward to the wider rail network. The development will also result in reduced journey times and improved accessibility to employment and services.

Community Infrastructure (including Local Services and Amenity)

The proposed Project will cater for improved access by rail to existing community infrastructure including educational, community, medical, etc, by increasing the frequency of commuter services at train stations between Hazelhatch & Celbridge Station and Dublin's city centre. For Zone D, the existing resident, visitor and working populations in Dublin's city centre will benefit from the improved rail services and access to community infrastructure that the proposed Project will facilitate. Commuters will also be afforded with more options with choosing their time of departure to reach local services and amenity areas, having a positive, indirect and long-term effect on general amenity areas.

Economic Activity (including Tourism and Employment)

The proposed Project will cater for significant improvements to rail services between Hazelhatch & Celbridge Station and Dublin's city centre – enabling enhanced access to areas of employment and tourist facilities. Populations in proximity to Heuston Station will benefit from an improved sustainable transport service with a positive, indirect and long-term effect on economic activity, including tourism and employment.

7.6. Mitigation Measures

7.6.1. Construction Phase

As a result of the assessment of construction works, the following mitigation measures are recommended:

- Implementation of the Construction Strategy and all mitigation measures set out in Chapter 5 Construction Strategy of this EIAR and in the other chapters of this EIAR – particularly those directly impacting communities which include: Chapter 6 Traffic and Transportation, Chapter 9 Land and Soils, Chapter 10 Water, Chapter 12 Air Quality, Chapter 14 Noise and Vibration,

Chapter 16 Material Assets: Agricultural Properties, Chapter 17 Material Assets: Non-agricultural Properties, Chapter 18 Material Assets: Utilities and Chapter 23 Human Health.

- A Construction Environmental Management Plan (CEMP) has been prepared as outlined in Volume 4, Appendix 5.1 and will be updated by the successful Main Contractor to address all environmental issues including noise emissions from both machinery and noise from the workforce, dust minimisation, lighting spill on neighbouring residential areas at night-time, etc.
- Construction traffic management will be developed and implemented by the Contractor(s) via a construction traffic management plan to address all modes of transport during the construction stage and will be agreed with the respective local authorities prior to the commencement of the construction phase. Construction traffic management will be required to maximise the safety of the workforce and the public and to minimise traffic delays, disruption and maintain access to properties. It will also address temporary disruption to traffic signals, footpath access and the management of pedestrian crossing points, temporary disruption to rail traffic. It will also address the provision of appropriate temporary signage to direct road users to alternative car parking arrangements. The CTMP will be required to minimise disruption to economic amenities and residential properties and will ensure access is maintained along haulage routes and in vicinity of the construction site(s) for vehicles, pedestrians, cyclists, and economic operators at all times.
- A Mobility Management Plan (MMP) will be developed by the Contractor(s) as part of the CTMP and will address all modes of transport and travel required to deliver the project during the construction phase. This will include details regarding construction workers travelling to site, car-parking, haulage routes and construction compounds. Construction staff shall not be permitted to use the same station car parks for parking site vehicles where construction compounds are in situ.
- When railway services are planned to be disrupted for extended periods Iarnród Éireann will provide suitable bus transfer services to replace the services affected. Iarnród Éireann will be required to communicate disruption to rail passengers and the public in advance of all construction works that will impact service users and road-based users. The campaign will communicate alternative routes and appropriate signage including the proposed planned closure of station car parking spaces/access.
- The Contractor will appoint a Community Liaison Officer and will be required to develop and implement a Community Liaison Plan (CLP) prior to the construction phase.
- Iarnród Éireann will appoint a Community Engagement Manager (CEM) , or equivalent, who will be consulted in the preparation of the Plan as well as its maintenance and implementation. The CEM will provide the means of the stakeholder and members of the public to communicate with the project team, and for the project team to communicate relevant information of the proposed Project. Communication with the local community, with Dublin City Council, South Dublin City Council, Kildare County Council and other relevant stakeholders will be undertaken at an appropriate level and frequency throughout construction.

- Details of general construction process/phasing will be communicated to the relevant stakeholders prior to implementation to ensure local residents and businesses are fully informed of the nature and duration of construction.
- Condition Surveys will be carried out for properties which will include structural surveys prior to works with high levels of vibration e.g. piling, wall anchoring and soil nailing.
- Lighting used during the construction period will minimise its luminosity and duration used to alleviate light pollution. Lighting will be positioned away and angled downwards from nearby properties so light interference is minimised.

7.6.2. Operational Phase

The application of the mitigation measures identified throughout this EIAR and which are summarised in Chapter 27 Schedule of Environmental Commitments will all benefit the population in some form or another and are supported in this assessment.

- Design and maintain landscaping and public realm infrastructure to complement other environmental mitigation in this that promotes safety for all users.
- At detailed design stage the design team will continue to ensure safety is integrated into the design and maintenance of public spaces with a focus on promoting a sense of safety and comfort for all users particularly the young, old and people with disabilities.
- The public realm designs shall encourage passive security of public spaces and on transport infrastructure, e.g. through appropriate lighting, pleasant surroundings and design that discourages anti-social behaviour, graffiti, etc.
- Planned works including maintenance of the railway infrastructure shall be communicated to neighbouring properties as part of the CIÉ notification procedures.
- Iarnród Éireann will continue to improve and enhance sustainable mobility measures to enable future capacity enhancements in a planned and co-ordinated manner.
- All replacement and modifications to bridges and footbridges shall be designed to integrate with existing and future transport networks and promote sustainable mobility in line with government transport and climate policies.

7.7. Monitoring

No project specific monitoring is proposed in relation to the Population effects.

7.8. Residual Effects

7.8.1. Construction

There is limited potential to mitigate potential effects on land use and settlement during construction. Residual effects are therefore as they have been stated in Section 7.5.1 of this chapter.

Following the implementation of mitigation measures, residual effects on rail users will be negative, slight and with a temporary impact due to rail service disruptions. Residual effects on journey

characteristics and the journey amenity of road users will be negative, slight temporary, short-term effects along haulage routes and along localised road diversions.

Following the implementation of mitigation measures, residual effects on pedestrians and cyclists during the bridge modification works will be negative, slight, temporary, short-term effects.

Following the implementation of mitigation measures, the residual effect for populations accessing community infrastructure including recreational facilities will be negative, slight, temporary, short-term effects.

Following the implementation of mitigation measures, residual impacts on access to businesses and on the access to and operation of tourist facilities will have a negative, slight, temporary, short-term effect.

7.8.2. Operation

Overall, the proposed Project will have a positive, significant, and long-term residual effect on the existing and emerging land use trends which support population growth, economic activity and zoned development.

The residual effects on journey characteristics and journey amenities for rail passengers will have positive, significant and long-term effects.

The proposed modernised electrified rail fleet and capacity enhancements will provide greater access by rail to existing community infrastructure including educational, community, medical, etc. by increasing the frequency of commuter services at train stations along the rail line. Commuters will be afforded with more options when choosing their time of departure to amenity areas and vice versa, having a positive, indirect and long-term effect on general amenity areas.

7.9. Cumulative Effects

The cumulative assessment of relevant plans and projects is undertaken separately in Chapter 26 of this EIAR.

7.10. References

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